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CONTENTS.

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AN ADDRESS on the Uses of Tuberculin in Pulmonary Tuberculosis. Delivered as an Introduction to a Discussion on the Subject at the Therapeutical and Pharmacological Section of the Royal Society of Medicine on Feb. 26th, 1912, by ARTHUR LATHAM, M.D. Oxon., F.R.C.P.Lond., Physician to, and Lecturer on Medicine at, St. George's Hospital.—(*Illustrated*)..... 1109

ORIGINAL ARTICLES.

Progressive Lenticular Degeneration: A Familial Nervous Disease associated with Cirrhosis of the Liver. By S. A. KINNIER WILSON, M.D., B.Sc.Edin., M.R.C.P. Lond., Registrar to the National Hospital for the Paralysed and Epileptic, Queen-square, London.—(*Illustrated*)..... 1115

The Treatment of Opium Poisoning by the Faradic Current. By FREDERICK TAYLOR, M.D. Lond., F.R.C.P. Lond., Consulting Physician to Guy's Hospital; Physician to the Seamen's Hospital, Greenwich 1120

Notes on Uterine Hæmorrhage, with Special Reference to the Abuse of the Curette. By BECKWITH WHITEHOUSE, M.S. Lond., F.R.C.S. Eng., Assistant Gynæcologist, General Hospital, Birmingham; Assistant Clinical Lecturer on Diseases of Women, University of Birmingham 1123

The Treatment of Bilharziasis by Salvarsan. By H. B. DAY, M.D.Lond., M.R.C.P. Lond., Physician to Kasr-el-Ainy Government Hospital, Cairo; and OWEN RICHARDS, M.Ch.Oxon., F.R.C.S. Eng., Surgeon to Kasr-el-Ainy Government Hospital, Cairo 1126

Can as Good Results be Obtained by the Treatment of Pulmonary Tuberculosis in the Low-lands as at High Altitudes? By Professor CHR. SAUGMAN, Medical Director of Vejlefjord Sanatorium, Denmark..... 1127

Cæsarean Section for Labour Obstructed by a Suppurating Ovarian Dermoid Cyst. By J. B. HELLIER, M.D. Lond., M.R.C.S. Eng., Honorary Obstetric Physician, Leeds General Infirmary..... 1129

MEDICAL SOCIETIES.

ROYAL SOCIETY OF MEDICINE:
OBSTETRICAL AND GYNÆCOLOGICAL SECTION:—Exhibition of Specimens.—Fibro-Adenomata of the Ovarian Fimbria and the Question of the Accessory Ovary.—Retroflexion of the Gravid Uterus.—Rupture of Umbilical Vessels during Labour 1129

MEDICAL SOCIETY OF LONDON:
The Vital Phenomena under Anæsthesia—Post-anæsthetic Poisoning 1130

LIVERPOOL MEDICAL INSTITUTION:
Exhibition of Specimens.—Bacteria Carried by Flies 1131

ROYAL ACADEMY OF MEDICINE IN IRELAND:
Acute Yellow Atrophy.—Human Actinomycosis 1131

UNITED SERVICES MEDICAL SOCIETY:
Special Weaknesses, from a Medical Aspect, of Volunteer Troops 1133

MEDICO-CHIRURGICAL SOCIETY OF GLASGOW:
Diagnosis of Chronic Gonococcus Infections 1133

LONDON DERMATOLOGICAL SOCIETY:
Ionisation in the Treatment of Diseases of the Skin 1133

BRADFORD MEDICO-CHIRURGICAL SOCIETY:
Exhibition of Cases and Specimens 1133

SHEFFIELD MEDICO-CHIRURGICAL SOCIETY:
Treatment of Fractures of the Lower End of the Humerus by Acute Flexion.. 1134

REVIEWS AND NOTICES OF BOOKS.

Gesammelte Werke von Robert Koch. Unter Mitwirkung von Prof. Dr. G. Gaffky, und Prof. Dr. E. Pfuhl; herausgegeben von Prof. Dr. J. Schwalbe. (First Notice).... 1134

National Insurance. By A. S. Comyns Carr and W. H. Stuart Garnett, and J. H. Taylor, M.A. Cantab., M.B., Ch.B.Vict. With a Preface by the Right Hon. D. Lloyd George, M.P..... 1135

Microbiology for Agricultural and Domestic Science Students. Edited by Charles E. Marshall 1136

A Text-book of Medical Diagnosis. By James M. Anders, M.D., Ph.D., LL.D., and L. Napoleon Boston, A.M., M.D. 1136

Anæsthesia and Analgesia. By J. D. Mortimer, M.B. Lond., F.R.C.S. Eng. 1137

A Dictionary of Applied Chemistry. By Sir Edward Thorpe, C.B., LL.D., F.R.S. 1137

On the Physiology of the Semicircular Canals and their Relation to Sea Sickness. By J. Byrne, A.M., M.D., LL.B. 1138

NEW INVENTIONS.

Forceps for Use with Michel's Clips.—(*Illustrated*)..... 1138

LEADING ARTICLES.

BOILED MILK 1140

MEDICAL TESTIMONY..... 1140

THE SPREAD OF PLAGUE BY INGESTION? 1141

ANNOTATIONS.

Royal Honour to the Profession 1142

The Perception of Space 1142

The Metropolitan Water-supply 1142

Physical Fitness of the Territorial Force 1142

A Departmental Committee on Industrial Diseases 1143

Heliotherapy in Tuberculous Peritonitis 1143

The Poison of Laburnum 1143

The New Premises of the English Conjoint Board 1144

Tumours to which Attention is First Drawn by Hæmorrhage into their Substance.. 1144

School Hygiene at the Third Portuguese Congress of Pædagogy 1144

Amœbic Dysentery Contracted in Scotland 1145

Asparagus 1145

The London and Counties Medical Protection Society.. 1146

Small-pox in Canada 1146

Industrial Accidents 1146

"Murphy's Clinics" 1146

VITAL STATISTICS:
Health of English Towns ... 1149
Health of Scotch Towns..... 1150
Health of Irish Towns 1150

SPECIAL ARTICLES.

King Edward's Hospital Fund for London 1139

The Metropolitan Water-supply: Fifth Annual Report.—Importance of Adequate Storage.—Seventh Research Report 1147

Medicine and the Law: A "Dental Institute" and its Patient.—A Judge and Medical Evidence.—The Identity of the Sardine 1148

Central Midwives Board 1149

The Services: The Course of Instruction for Acting Surgeons at the R.N. Hospital, Haslar 1150

The International Congress on Tuberculosis at Rome: Section I.: Social Defence. Section II.: Pathology and Therapeutics. Section III.: Etiology and Epidemiology 1156

Scotland: Proposed Country Home for Glasgow Children.—Organisation of Charities in Aberdeen.—Chalmers Hospital, Banff: Impending Litigation 1160

Ireland: Advisory Committee to the Irish Insurance Commissioners.—Women's National Health Association.—The Vaccination Question.—Ulster Medical Society 1161

Paris: Congress of French Alienists and Neurologists.—A Campaign against Tinea.—Antitetanic Serum Therapy 1161

Vienna: A Sporadic Case of Small-pox.—The Problem of Cheap Sanitary Dwellings.... 1162

Notes from South Africa: Mortality amongst Mine Employees 1163

THE NATIONAL INSURANCE ACT.

British Medical Association ... 1165

CORRESPONDENCE.

Hospitals and Hospital Funds (Mr. Warrington Haward) ... 1152

State Insurance in Germany (Mr. George P. Forrester).... 1152

The Bed Isolation of Cases of Infectious Disease (Dr. F. G. Crookshank, Dr. Frederic Thomson) 1153

Psychiatry in England: its Present State and its Outlook (Dr. George A. Auden) 1153

Pygmy Crania from Egypt (Prof. Karl Pearson) 1154

The Admiralty Test for Colour-Blindness (Mr. Kenelm H. Digby) 1154

Selborne Lectures (Mr. Wilfred Mark Webb) 1155

Leishmania and Mosquitoes (Captain J. Hay Burgess, I.M.S.)..... 1155

Public Vaccinators: A Query 1155

The Medical Profession and the National Insurance Act (Dr. Charles F. Seville) 1156

OBITUARY.

William Ogle, M.A., D.M. Oxon., F.R.C.P. Lond..... 1164

Deaths of Eminent Foreign Medical Men 1165

MEDICAL NEWS.

Plymouth Port Sanitary Authority..... 1119

Manchester Royal Infirmary .. 1122

The Gresham Lectures, 1912... 1129

Shell-fish and Enteric Fever... 1134

Devon and Exeter Hospital ... 1139

The Child-Study Society 1151

Bristol Dispensary for the Prevention of Consumption 1156

Donations and Bequests 1164

Society for Relief of Widows and Orphans of Medical Men 1164

Pass-list of the Society of Apothecaries of London.... 1166

Foreign University Intelligence..... 1166

The Health of Torquay 1166

The Bristol Health Committee and Lady Medical Inspectors 1166

National Health Week..... 1166

Winsley Sanatorium: Annual Report 1166

Royal Institution 1167

Literary Intelligence 1167

Australian Institute of Tropical Medicine..... 1167

PARLIAMENTARY INTELLIGENCE.

Notes on Current Topics: The Inebriates Bill..... 1167

House of Commons: Forcible Feeding of Prisoners.—The Administration of the Insurance Act.—Sanatorium Benefit 1167

Books, &c., received..... 1169

Appointments..... 1170

Vacancies..... 1170

Births, Marriages, and Deaths 1171

Notes, Short Comments, and Answers to Correspondents.. 1171

Medical Diary..... 1172

Meteorological Readings..... 1175

Acknowledgments of Communications received..... 1174

FOR INDEX TO ADVERTISEMENTS SEE PAGES 2 & 4.

INDEX

MEDICAL AND OTHER BOOKS AND PUBLICATIONS

PAGE

ARNOLD:—
Howard .... House Surgeon's Vade-Mecum 7
Parsons & Wright..... Practical Anatomy 7
Stewart .... Nervous Diseases 7

BAILLIÈRE, TINDALL & COX:—
Bidwell .... Intestinal Surgery 6
Brünings .... Direct Laryngoscopy, &c..... Cover 1
Mummery .. Sigmoidoscope .. Cover 1
Pickerill .... Prevention of Dental Caries &c. .... Cover 1

BALE, SONS & DANIELSSON:—
Moullin .... Inflammation of the Append'x ..... Cover 1
" .... Treatment of Gastric Ulcer ..... Cover 1

CASSELL & CO.:—
Berkeley & Bonney.... Gynæcological Surgery 9
Bosanquet & Eyre .... Serums, &c..... 9
Bramwell .. Hypnotism, &c..... 9
Bruce ..... Materia Medica, &c..... 9
Burton-Fanning .. Open-Air Treatment of Tub rculosis 9
Candy ..... Manual of Physics 9
Harris ..... Electrical Treatment .. 9
Hutchison & Rainy .... Clinical Methods 9
Luff & Candy Manual of Chemistry .. 9
Morris, Sir M. .... Diseases of the Skin .. 9
Shaw..... Organotherapy 9
Treves, Sir F. Surg. Applied Anatomy 9

CHURCHILL, J. & A.:—
Berry & Legg ..... Hare Lip and Cleft Palate..... Cover 1

CHURCHILL—(Continued).
Books for Nurses 3
Eden..... Midwifery 3
Edwards .... Diseases of the Rectum, &c. 3
Fenwick .... The Value of Radiography ..... Cover 1
Galabin & Blacker .. Midwifery 3
Greenish .... Foods and Drugs..... 3
Hampshire .. Volumetric Analysis .. 3
Hare, &c. .. National Standard Dispensatory 3
Hewlett .... Pathology 3
Parsons .... Diseases of Eye 3
Pott's..... Electricity 3
Smith ..... Taylor's Medical Jurisprudence 3
" Lectures on Medical Jurisprudence 3
" Domestic Hygiene 3
Thorne ..... Schott Nauheim Treatment, &c., of the Heart 6
Thresh ..... Simple Method of Water Analysis 3
Turner & Stewart .. Nervous Diseases 3
White ..... Materia Medica. Cover 1

EWART, SEYMOUR & CO.:—
Muller ..... My System 6

FROWDE:—
Berkart .... On Bronchial Asthma, &c..... Cover 1

FROWDE AND HODDER & STOUGHTON:—
Bidwell .... Minor Surgery 6

GLAISHER:—
Herschell .... Chronic Affections of the Stomach ..... Cover 1
Savill ..... Hysteria ..... Cover 1
" ..... Neurasthenia .. " 1

GRIFFIN & CO.:—
Mercier .... Lunatic Asylums 6
Bevan-Lewis Mental Diseases..... 6

KIMPTON—
Henry Kimpton's List of Surplus Books 8

LEWIS:—
Byrne ..... Physiology of the Semicircular Canals..... 44
Coleman & Hilliard .. Anæsthetics..... 44
Dawson .... Causation of Sex 44
Lewers..... Diseases of Women 8
" ..... Cancer of the Uterus .. 8
Moullin .... Enlargement of the Prostate .... Cover 1
Murrell .... Cases of Poisoning 44
Paget ..... For and Against Experiments on Animals 44
Rawlings.... Landmarks, &c. 44
Roth ..... Lateral Curvature of the Spine ..... Cover 1
Shuttleworth & Potts.... Mentally - Deficient Children 44
Stoddart .... Mind and its Disorders. 44
Thursfield & Branson .. Medical Morbid Anatomy, &c. 44

MACLEHOSE & SONS (GLASGOW):—
Macewen, Sir W. .... Growth of Bone..... 8

MACMILLAN & CO.:—
Brunton, Sir T. L. .. Disorders of Digestion. 5
" .. Action of Medicines .. 5
" .. Assimilation, &c 5
" .. Papers on Circulation and Respiration 5
Mennell .... Treatment of Fractures 5
Mercier..... Conduct & its Disorders 5

MACMILLAN—(Continued).
New System of Medicine 5
Savage..... Milk and the Public Health 5
System of Gynæcology 5

MEDICAL PUBLISHING CO.—
Lane ..... Operative Treatment of Fractures 6
" ..... Cleft Palate and Hare Lip 6

NISBET & CO.:—
Lane ..... Treatment of Chronic Constipation 6
Paterson .... Auto-Inoculation in Pulmonary Tuberculosis ..... Cover 1

REBMAN:—
Hilger ..... Hypnosis and Suggestion 6
Scott ..... Refraction and Visual Acuity 6

SHERRATT & HUGHES:—
Bury ..... Nervous System 8

WRIGHT & SONS (BRISTOL):—
French ..... Index of Differential Diagnosis of Main Symptoms .... Cover 1

MEDICAL LIBRARIES, &c.:—
Baker, Birmingham—
Book Bargains 8
Beasley & Ketley—Stammering 8
Behnke—Stammering 8
Davidson & Co.—
Sighs Testing for the General Practitioner ..... Cover 1
Matthews Bros.—
Wood: Application of Trusses .. 8
Norwood Sanatorium—
Hare: Inebriety ..... Cover 1

OFFICIAL AND GENERAL ANNOUNCEMENTS

APPOINTMENTS VACANT:—
Alnwick Infirmary 79
Australian Institute of Tropical Medicine, Queensland 82
Bedford County Hospital 78
Belgrave Hospital for Children, Clapham-road 80
Bradford Children's Hospital 79
Brentford Union 80
Bristol General Hospital 82
Bristol Royal Hospital for Sick Children and Women 79
British Red Crescent Society 82
Burton-on-Trent Infirmary 79
Bury Infirmary 80
Cheltenham General Hospital 82
City of Liverpool Infectious Diseases Hospital 80
County and City of Perth Royal Infirmary 81
County Council of Cumberland 79
Denbighshire Infirmary, Denbigh 79
Dreadnought Hospital, Greenwich .. 82
East London Hospital for Children 81
Elder Dempster & Co. 82
Essex County Asylum, Brentwood .. 79
Evelina Hospital for Sick Children .. 79
Frere Hospital, East London, Cape Colony 80
Gordon Hospital for Rectal Diseases . 82
Guy's Hospital 80
Herefordshire General Hospital 78
Hospital for Consumption and Diseases of the Chest, Brompton 81
Hospital for Sick Children, Newcastle-on-Tyne 81
Huddersfield Royal Infirmary 79
Italian Hospital 80
Kent and Canterbury Hospital 79
Kesteven County Asylum, Sleaford .. 80
King Edward VII. Hospital, Cardiff .. 81
Leeds General Infirmary 79
Leeds Public Dispensary 80
Leeds Tuberculosis Association 81
London Hospital 79
London Temperance Hospital 78
Macclesfield General Infirmary 80
Manchester Royal Eye Hospital..... 79
Manchester Royal Infirmary 82
Mount Vernon Hos. for Consumption 81
National Hospital for Diseases of the Heart, Soho-square 81
Newport and Monmouthshire Hosp... 80
Norfolk and Norwich Hospital 79
North Lonsdale Hospital, Barrow-in-Furness 79
Northumberland House, Finsbury-park 80
Paddington Infirmary 81
Peckham House Peckham 82
Queen Adelaide's Dispensary 80
Royal Free Hospital, Gray's Inn-road 81
Royal Hampshire County Hospital, Winchester 78
Royal Infirmary, Sunderland 79
Royal Sea Bathing Hosp., Margate .. 82
Royal Sussex County Hospital 82
Royal Victoria Eye and Ear Hospital 80
Royal Westminster Ophthalmic Hospital 79
St. Bartholomew's Hospital 81
St. Mary's Hospital 81
St. Mary's Hospital for Women and Children, Plaistow 80

APPOINTMENTS—(Continued).
Salford Royal Hospital 81
Samaritan Free Hospital for Women, Marylebone-road 79
Sheffield Royal Infirmary 80
Staffordshire General Infirmary 81
Stockport Infirmary 78
Wakefield Genera Hospital 78
Walsall and District Hospital 82
Wolverhampton and Staffordshire General Hospital 79
York County Hospital 81
York Dispensary 80

ASSISTANCIES, MEDICAL..... 82

ASYLUMS HOMES, &c.:—
Armstrong, Castlenau 78
Ashwood House, Kingswinford 70
Association of Medical Men Receiving Resident Patients 78
Barnsley Hall, Bromsgrove 70
Barnwood House Hospital 71
Bishopstone House, Bedford..... 70
Brunton House, Lancaster 78
Buntingford House Retreat, Buntingford 73
Camberwell House, Peckham-road .. 70
Cheadle Royal 70
Clarence Lodge, Clapham-park 71
Colthurst House, Warford..... 78
Coppice, The, Nottingham..... 71
Crookabury Sanatorium, Surrey..... 75
Croydon Mental Hospital 69
Dalrymple House, Rickmansworth .. 74
Dartmoor Sanatorium 74
David Lewis Colony Alderley Edge.. 70
Dimsdale Park, Darlington 71
Dr. E. Rosenberg Sanatorium..... 76
Ghyllwoods 73
G. L., South Molton-str et 78
Grove House, Church Stretton..... 71
Grove, The, Ilkton, Norwich 71
Haydock Lodge, Newton-le-Willows.. 73
Heigham Hall, Norwich 70
Home for Epileptics, Maghull 77
Home for Invalids, Hornsey 76
Institute for Electro-Medical, &c., Treatment 72
Inverurie Lodge Sanatorium, Colinsburgh 74
Kingsdown House, Box 70
London Fever Hospital 70
London Open - Air Sanatorium, Wokingham 74
Mailing Place, Kent 71
Malvern Hydropathic 77
Melbourne House, Leicester 77
Meyrick, Brighton 78
Middleton Hall, Co. Durham 70
Moat House, Tamworth 71
Mount Pleasant, Wanstead 76
Newmains Retreat, Lanarkshire 75
Nordrach in Wales Sanatorium 75
Nordrach-on-Dee, Banchory 74
Northlands Retreat, Wandsworth 77
Northumberland House, Finsbury-park 72
Northwoods House, Winterbourne .. 72
Norwood Sanatorium, Ltd. 75
No. 655, L.O., Strand 78
No. 754, L.O., Strand 78
Osea Island, Heybridge 73
Peckham House 72

ASYLUMS—(Continued).
Plympton House, South Devon 71
Portsmouth Corporation Mental Hospital 71
Rueb ury Sanatorium, Northallerton.. 75
St. Andrew's Hospital, Northampton 71
St. Luke's Hospital, E.C. 70
Sanatorium Clavadel..... 75
Shaftesbury House, Formby-by-the-Sea 72
Springfield House Private Asylum, Bedford 71
Stocker, Craven-street..... 76
Streeton House, Church Stretton 71
The Grange, Rotherham 70
The Pleasaunce, York 71
Uplands, Macclesfield 78
Vale of Clwyd sanatorium..... 75
Warneford Asylum, Oxford 70
Wye House, Buxton 71

FINANCIAL, &c.—
Equitable Reversionary Interest Soc. 68

HEALTH RESORTS, BATHS, &c.:—
Alexandra Therapeutic Institute 77
Badgastein 77
Bad Stachelberg 76
Homburg 76
Leysin, Switzerland 76
Peebles Hotel Hydropathic 77
Royal Baths 77
St. Joachimsthal 76 77
Smedley's, Matlock 77
Wildbad 77
Woodhall Spa Baths, &c. 75

HOTELS:—
Hampden Residential Club 66
Prospect Hotel, Harrogate 75
White Hart Hotel, Margate 77

HOUSE & ESTATE AGENTS:—
Clark & Son New Cavendish-street .. 84
Ley Clark, Wimpole-street 84
Owner, Forest Hill..... 84
47, Princes-square 84
Pulleyn, Greer & Co., York 84
CONSULTING-ROOMS :—
House keeper, Ebury-street 84
No. 676, L.O., Strand..... 84

LIFE & FIRE ASSURANCES:—
Lloyd's Special Motor Policy 84
National Provident Institution 68
Prudentia 68

MASSAGE:—
London School of Massage..... 68

MEDICAL ACCOUNTANTS, &c.:—
Dacie 83
Gantlie 85
Turner 85

MEDICAL AGENTS:—
Blundell & Rigby 86
Fieldhall, Limited 86
Manchester Clerical, &c., Association 86
Manchester Medical Agency 85
Medical Agency 86
Moore & Co. 82

MEDICAL AGENTS—(Continued).
Needes, Herbert 85
Needes, J. C. 89
Peacock & Hadley 86
Reynolds & Branson 89
Scholastic, Clerical, &c., Assoc. 88
Turner 87

MEDICAL SCHOOLS:—
(LONDON)
Central London Ophthalmic Hospital 66
King's College Hos. Medical School.. 66
London Hospital Medical College and Dental School 66
National Dental Hos. and College.... 65
West London Post-Graduate College.. 66
(PROVINCIAL, &c.)
Edinburgh University Residential Medical College 67

NURSING INSTITUTES:—
General Nursing Association 68
Harley Institute 69
Hospital for Sick Children, Great Ormond-street 68
Leeds Trained Nurses' Institution 69
London Nurses' Association 69
Male Nurses Temperance Co-operation 68
Mental Nurses' Co-operation 68
National Hospital Male Nurses Association 68
Nurses Co-operation, Portland-place 69
St. John's House..... 68
St. Luke's Hospital, E.C. 69
Temperance Male Nurses' Co-operation 69
The Retreat, York 69

OFFICIAL NOTICES:—
City of London Lying-in Hospital.... 67
London Post-Graduate Association .. 65
London School of Clinical Medicine.. 66
Medical Graduates' College and Polyclinic 65
North-East London Post-Graduate College 66
Oxford Eye Hospital..... 67
Plaistow Fever Hospital..... 67
Queen Charlotte's Lying-in Hospital.. 67
Research Studentship in Physiology .. 67
Royal College of Physicians 67
Royal Eye Hospital, Southwark 67
Royal Institute of Public Health 66
Royal London Ophthalmic Hospital.. 67
Royal Society of Medicine .... Cover
Royal Surgical Aid Society 67
Throat Hospital, Golden-square 67
University of London, University College 66
West End Hospital for Diseases of Nervous System 67
York-road General Lying-in Hospital, Lambeth 67

PARTNERSHIPS & PRACTICES 83

RAILWAY & STEAMSHIP CO.S
New Zealand Shipping Co..... 68
R.M.S.P.—
Yachting Cruises de Luxe 69

TUTORS & LECTURERS:—
Gemmell 67
Knight 67
Med. Corres. Coll. 88
No. 449, L.O. 84
Schnelle 6
Weymouth 65

For Index to Trade and Miscellaneous Advertisements see page 4.

An Address
ON
THE USES OF TUBERCULIN IN PULMONARY TUBERCULOSIS.

Delivered as an Introduction to a Discussion on the Subject at the Therapeutical and Pharmacological Section of the Royal Society of Medicine on Feb. 20th, 1912,

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MR. PRESIDENT AND GENTLEMEN,—In the first place I wish to thank the President and the Council of this section for their courtesy in asking me to open this discussion. There can be no doubt that such a discussion is required at the present time, for on the one hand we have a school which to my mind may be regarded as placing the value of tuberculin too high and of focussing attention on this remedy to the exclusion of other important factors in treatment, and on the other we have a school—daily becoming smaller and less important—which denies that tuberculin is of value. The latter view is largely based on the experience obtained when Koch first introduced his discovery, but that experience has subsequently been shown by patient work to have been vitiated chiefly by an improper system of dosage and an improper selection of cases. Both schools have right on their side, but both are too dogmatic in their generalisations. To-day, I take it, we want not dogmatic statements, but a practical and judicial examination of the results or impressions of our individual experience, so as to make others appreciate the fact that the truth concerning tuberculin lies midway between the conclusions formed by the two existing schools. I propose, therefore, to introduce the subject under a series of headings with the object of facilitating discussion.

THE RESULTS OBTAINED BY TUBERCULIN TREATMENT.

It is held by some that statistical evidence on this point should be conclusive on one side or the other, and so far as statistical results go they show that tuberculin in association with other methods gives better results than any other known method of treatment. A larger proportion of patients so treated certainly appear to maintain their working capacity for a longer period, whilst it would also appear to be proved that tubercle bacilli disappear from the sputum in a larger proportion of cases treated by this method than with any other method. There are, however, difficulties, some of which I regard as insuperable, with regard to statistical proof in medical problems. It is difficult, if not impossible, to compare the results of one observer accurately with those of another, as the original data are not strictly comparable. For example, our views as to diagnosis differ. Some rely largely, if not entirely, on the presence of tubercle bacilli in the expectoration, some will make a positive diagnosis on signs and symptoms which will not convince others, and some, again, rely in many instances upon a positive reaction to old tuberculin. It may be said, in passing, that if the problem of pulmonary tuberculosis can be reduced so far as diagnosis is concerned to a positive reaction to old tuberculin, or so far as treatment is concerned to treatment with one or other of the numerous preparations of tuberculin, then in this particular medicine has become an easy art. Certainly if we rely on an old tuberculin reaction as showing the presence of tuberculosis which requires active treatment, we shall have a large measure of success with tuberculin, but our results will be vitiated by the fact that a very considerable proportion of our cases would have shown equally good results by other methods, or, indeed, without any treatment.

Then we are met by the different views of different observers as to what we mean by what is usually expressed by the unfortunate term "an early case." So-called early cases differ largely in their characteristics and as regards their progress. The fact that the disease appears to be of recent origin does not afford a reliable basis on which to calculate results, and I do not think that we shall be able usefully to correlate the results obtained by different observers until we are in possession of a better classification of the different forms or what are called stages of the disease. The best I know is that of Dr. A. C. Inman, which is based upon the facility with which auto-inoculation occurs or is produced.

A further difficulty about statistical proof is the difficulty in keeping our patients, and especially our hospital patients, under observation for a sufficient length of time after discharge to form a useful opinion of the real results. There is also the difficulty when relapse occurs of knowing whether the relapse was not inevitable under the sanitary conditions, conditions of work and so forth, whatever the treatment. We cannot achieve the impossible, and if we make the attempt and fail it cannot fairly be laid at the door of tuberculin. For these and other reasons I hold that statistical information is too full of fallacies to be really useful, but I would refer those who are interested in this part of the subject to Dr. Lawrason Brown's article in Klebs's volume on "Tuberculosis."

Another method—also open to many fallacies—of estimating the value of tuberculin is the *a priori* method. For example, we have now accumulated a good deal of information concerning the value of vaccine-therapy in a number of other diseases, and although this method has its limitations, I think we shall be all agreed in holding that vaccine-therapy is a great addition to our therapeutical resources. We would by analogy expect tuberculin to be of value. Again, during recent years we have been able, as the result of the work of Sir Almroth Wright and, especially in this connexion, of Dr. Inman, to formulate a working hypothesis which makes a strong appeal to many of us, as an explanation of the effects of sanatorium treatment. I refer to the theory of auto-inoculation. It would seem to be proved that movement or exercise determines to some extent the amount of lymph and blood which passes through a diseased lung in a given time, and that this in turn determines the amount of bacterial products absorbed into the general circulation, and so determines the task set the defensive forces of the body. This theory is not the whole story, it takes no account of the action of ferments, the products of the destruction of tissue and other possible factors, but it would seem to show that we can to some extent limit or increase the absorption of bacterial products by rest and exercise. The bacterial products are in the main the patient's own tuberculin—that is to say, we are dealing with "autogenous inoculation" in sanatorium treatment. In support of this I would mention that the effect of exercise in this treatment, and the effect of a hypodermic or oral dose of tuberculin, is precisely similar. Over-exertion, or an overdose of tuberculin administered hypodermically or orally, produces precisely the same clinical symptoms—malaise, headache, increase of expectoration, fever, &c.; whereas a beneficial amount of exercise or a suitable dose of tuberculin produces strictly comparable clinical effects. I think we are all agreed that sanatorium treatment, properly carried out, in suitable cases gives good results, and that in the main this depends chiefly upon the proper regulation of exertion. If this is so, we have a good *a priori* argument as to the value of tuberculin.

All these methods of estimating the value of tuberculin are unsatisfactory. We have, therefore, to rely upon the impressions formed by clinical observers. There are fallacies in this as in other methods, but it is the method upon which many of our advances in therapeutical knowledge have been obtained. A discussion such as this should help us to form conclusions. I think we shall find that those who have much experience are convinced of the value of tuberculin in pulmonary tuberculosis as in other forms of the disease, and that opposition comes almost wholly from those whose experience of the remedy as now given is limited or one of hearsay. That tuberculin in this connexion is of value is accepted in Germany and in America. It is also a significant fact, that whereas six years ago tuberculin was not used in more than two or three institutions in this country, it is now stated to be employed as a routine measure in over 200.

PREPARATIONS OF TUBERCULIN.

One of the difficulties of tuberculin treatment is the number of different preparations. For the convenience of the section I give below a table of some of the chief varieties and their method of manufacture. It is evident from this table that

at present we lack anything like efficient standardisation of the different preparations, and consequently the same dose of preparations with the same name have at times different effects on the same patient. I would draw attention also to the fact that the age of the preparation and the length of time a solution has been in existence must be taken into account. It is not an uncommon thing to find that when a fresh solution is employed the effect of a particular dose is more marked than the effect of the same dose of a month-old solution, and sometimes in this way undesirable reactions are produced. My experience suggests that it is important to employ solutions which have been recently prepared. Again, there is difficulty in comparing the toxicity of the different preparations, or in saying how much of one may be regarded as equivalent to a certain dose of another. Another point which this lists brings out is the fact that there is a marked and essential difference between the various preparations. For example, old tuberculin consists of exotoxins and a certain amount of endotoxins. Tuberculin T.R. consists of endotoxins only, and T.O.A. or P.T.O. consists of exotoxins only, whereas B.E. may be regarded as a true vaccine. Different observers pin their faith to different preparations, and the astonishing thing is that the results of all appear to be the same, in spite of the fact that there are such essential differences in the tuberculin used. This emphasises the fact that our knowledge of the subject is by no means final. The custom of many authorities of giving a course of P.T.O., then a course of P.T., and finally a course of old tuberculin has a good deal to recommend it in view of the above, but I would say that I see no special virtue in bovine preparations and that I am not convinced, by the evidence hitherto brought forward, that it is preferable to use bovine preparations in pulmonary tuberculosis and human preparations in so-called surgical tuberculosis. My own experience has been mainly with T.R. or B.E. and to a less extent with P.T.O. and subsequently P.T. and old tuberculin. T.R. is, I think, especially useful in febrile cases. B.E. is the cheapest preparation, and is probably the most widely used form. It has the objection that it is more prone than most to cause painful local infiltrations. To overcome this we have the S.B.E., but our experience of this form is not yet sufficiently large to allow any useful deduction to be made. In some cases tuberculin has been prepared from the patient's own strain, and on the analogy of vaccine therapy generally it is possible that an autogenous B.E. might be the best thing to use.

There are a certain number of patients who have peculiar idiosyncrasies for one or other preparation, being more sensitive, it may be, to T.R. or B.E. or P.T.O. Whenever there is evidence of undue sensibility to any given preparation it is best to try the effect of another.

*The Tuberculins.**

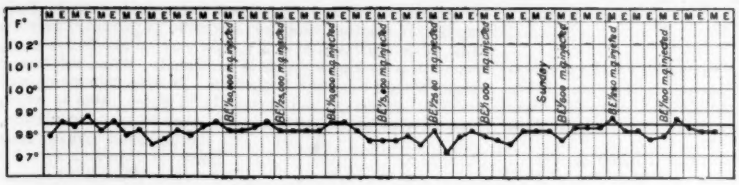
HUMAN.	BOVINE.
(1) OLD TUBERCULIN (*Tuberculinum Kochi*).	(1) BOVINE TUBERCULIN (*P.T. from the German Perlsucht Tuberculin*).
Preparation.—Old Tuberculin is prepared from a four to five weeks' old culture of tubercle bacilli of a *human* strain, by evaporating to one tenth of its bulk, at a temperature not exceeding 70° C., and filtering through suitable filters. It consists of exotoxins and a certain amount of endotoxins obtained in the process of evaporation.	*Note.*—All bovine tuberculins in this column are prepared in an analogous manner to the corresponding tuberculins in the "HUMAN" column—the sole difference being that tubercle bacilli of a *bovine* strain are employed.
Employment.—For diagnosis and treatment.	*Employment.*—For diagnosis and treatment.
(2) TUBERCULIN T.R. (*Koch's New Tuberculin*).	(2) BOVINE TUBERCULIN T.R. (*Tuberculin P.T.R.*).
Preparation. — Triturated tubercle bacilli of a *human* strain are centrifugalised with sterilised water until all soluble products are dissolved. The supernatant liquid containing water-soluble toxins (termed T.O. by Koch) is rejected. By alternately treating the insoluble bacterial matter with sterilised water and centrifugalising a number of exceedingly fine emulsions are obtained, which on being bulked represent T.R. 1 c.c. T.R. contains the active—i.e., the insoluble—bacterial matter of 10 mg. of tubercle bacilli. A number of tests have shown this to represent 2 mg. of solid substance.	*Preparation.*—See note above.
Employment. — For treatment only.	*Employment.* — For treatment only.
(3) NEW TUBERCULIN BACILLI EMULSION (*Tuberculin B.E.*).	(3) BOVINE TUBERCLE BACILLI EMULSION (*Tuberculin P.B.E.*).
Preparation.—0·5 grm. of triturated *human* tubercle bacilli are emulsified with a mixture of 50 c.c. glycerine and 50 c.c. sterilised water. 1 c.c. B.E. contains 5 mg. bacillary substance.	*Preparation.*—See note above.
Employment. — For treatment only.	*Employment.* — For treatment only.
(4) T.O.A.	(4) P.T.O.
Preparation.—Four to five weeks' old cultures of *human* tubercle bacilli are filtered through bacteria filters. The absolutely germ-free filtrate constitutes T.O.A. It consists of exotoxins solely.	*Preparation.*—See note above.
Employment. — For treatment only.	*Employment.* — For treatment only.
(5) VACUUM TUBERCULIN.	(5) BOVINE VACUUM TUBERCULIN.
Preparation.—T.O.A. evaporated to one-tenth its bulk at a *low* temperature and in partial vacuum.	*Preparation.*—P.T.O. evaporated to one-tenth its bulk at a *low* temperature and in partial vacuum.
Employment. — For treatment only.	*Employment.* — For treatment only.
(6) TUBERCULIN A.F. (*Koch's Albumose-free Tuberculin*).	
Preparation.—Tuberculin A.F. is prepared from tubercle bacilli of a *human* strain which have been cultivated in a special medium consisting of inorganic salts and citrates, the sole nitrogenous constituent being asparagin. All additions of albumoses, peptone, and extractive matters from flesh and blood are avoided.	
Employment.—The mode of employment conforms in all particulars with that of old tuberculin, with which it corresponds in respect of its active value. The advantage of A.F. over old tuberculin consists in the strictly specific character of the reactions induced by it, and that anaphylactic symptoms are excluded in consequence of the absence of non-specific proteins.	
(7) TUBERCULOSIS SERO-VACCINE. *Emulsion of Sensitised Tubercle Bacilli (S.B.E.).*	
Preparation.—Well washed and sharply dried tubercle bacilli of a *human* strain are mixed with a quantity of fresh tuberculosis serum and kept several days in the incubator at 37° C., and then worked in a shaking apparatus with glass beads until no whole tubercle bacilli can be detected in a sample of the same. The disintegrated bacillary masses are then separated from the serum by centrifugation, washed with physiological saline solution, and finally made into a fine emulsion with 40 per cent. glycerine water, to which 0·5 per cent. carbolic acid has been added. 1 c.c. S.B.E. contains 5 mg. bacillary substance.	By special request a Bovine S.B.E. is supplied by the makers.
Employment. — For treatment only.	

* A table drawn up for the purpose of this article by Messrs. Meister, Lucius, and Brüning, Limited, 3, Jewry-street, London, E.C.

CLASS OF CASE FOR TUBERCULIN THERAPY.

Although I would by no means go so far as some authorities who hold that tuberculin should not be given whenever there is evidence of secondary infection, I cannot emphasise too strongly the necessity for care in the selection of cases for this treatment. There can be no doubt that tuberculin is capable of doing a great deal of harm, not only when improper dosage is employed, but also in comparatively large groups of cases. At one time I was not infrequently asked to demonstrate the value of tuberculin in cases which were obviously hopeless. To expect tuberculin to produce a miracle is foolish, and any expectation of good from a course of tuberculin in a series of advanced febrile cases in which there is marked secondary infection is foredoomed to disappointment. My experience suggests that tuberculin will not only do no good, but will cause harmful results in those cases in which there is more or less constant auto-inoculation, for example, cases in which frequent attacks of prolonged coughing or other symptoms produce a series of auto-inoculations which are beyond our control. If we give tuberculin

CHART 1.



in such a case we increase what may already be an excessive dose of the patient's own bacterial products, and so merely court disaster. We must not, however, generalise too freely, for every case has to be considered on its individual merits. In spite of this, we may say that the ideal cases for tuberculin-therapy are the cases of recent origin with little constitutional disturbance and chronic afebrile cases—that is the cases in which walking exercise to the extent of a few miles produces no febrile reaction. Another class of case in which tuberculin is of great value, in that it may enable the patient to "turn the corner," is the class of case in which there is no real progress in spite of more or less prolonged treatment on sanatorium lines, but in which the patient is just holding his own. These, of course, are the classes in which the majority of observers have obtained the best results. I think, however, that tuberculin has not been given sufficiently in febrile pulmonary tuberculosis, although its use in such cases is much more difficult and calls for mature experience and judgment. In those cases in which there is much irregularity with regard to the rises of temperature, and in which all our efforts fail to control this symptom, tuberculin does harm. It is, however, possible sometimes to control the cause of these irregular auto-inoculations. For example, a harassing cough involving much movement and fatigue may sometimes be controlled by the use of sedatives, such as codeine or the continuous inhalations of antiseptic remedies; active laryngeal tuberculosis may be controlled by vocal rest, or frequent vomiting may be relieved by appropriate remedies. Or, again, it is possible in a certain number of cases to control the auto-inoculations by means of what is called by the unfortunate name of artificial pneumothorax or compression of the diseased lung by means of nitrogen. When we can control the amount of auto-inoculation in this way and also in cases of febrile disease in which the auto-inoculations are more or less regular, my belief is that tuberculin may often greatly improve the chances of recovery, and I would urge its wider use in such instances at the hands of experts. One further point under this heading. In all forms of tuberculosis in which there is definite caseation and breaking down of the tissues, tuberculin will accentuate the intoxication if there is no outlet to the necrosed products, and similarly in pulmonary tuberculosis with marked and active caseation, the use of tuberculin accentuates the activity of the process. In some cases this is of value, as it leads to rapid breaking down of a localised area with cavity formation and subsequent healing.

CHART 2.

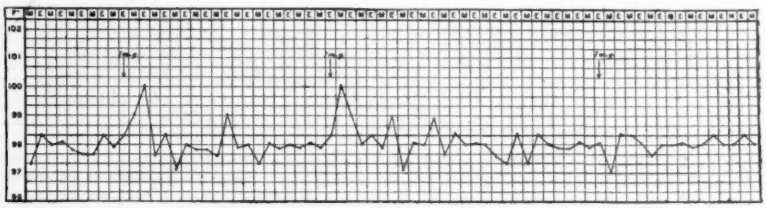
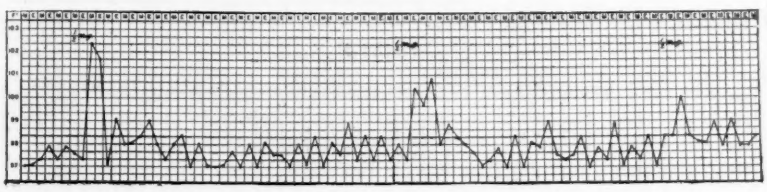


CHART 3.



DOSAGE AND SPACING OF DOSES.

In the choice of the initial dose and in the subsequent increase of dose the greatest care is required, and due consideration must be given to the peculiarities of each individual case. There is no need to hurry, for tuberculin treatment is a matter of months and not weeks. It will be found that in nearly every case, sooner or later, there is a period of difficulty owing to the sensibility of the patient to the remedy. Once this is over rapid progress, as a rule, occurs and increase of dosage is comparatively easy. In a smaller proportion of cases there is, however, constant difficulty owing to the sensibility of the patient, and in these it is a good plan to repeat the same dose for a considerable time and to refrain

CHART 4.

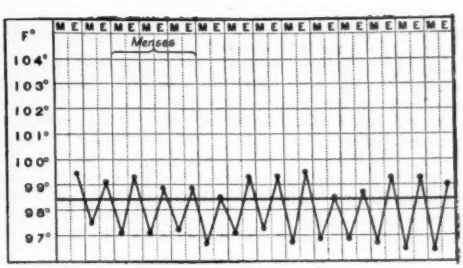


CHART 4A.

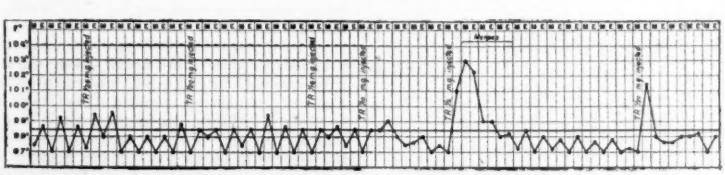
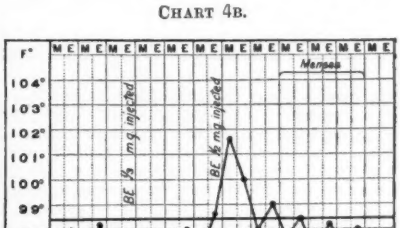


CHART 4B.



from frequent increases. We may now discuss the question of dosage under two broad headings: (1) Chronic afebrile cases; and (2) febrile cases.

(1) *Chronic Afebrile Cases.*

The initial dose.—This naturally depends on the preparation used. There is a wide difference in the size of the initial dose employed by different authorities. In many cases it is possible to commence with a comparatively large dose

CHART 5.

(such as 1/20000 mg. or 0·000005 c.c. T.R.) and to increase the size of the dose rapidly. (See Chart 1.) In a small percentage of cases such an initial dose will cause a general reaction which may do much harm, and will certainly delay the progress of arrest. Our knowledge is insufficient to enable us to foresee in which of these chronic cases such a reaction will be caused, and, therefore, it is best to begin with a minimal dose in all cases, such as 1/50000 mg. T.R. or B.E. (0·000002 c.c. T.R., or 0·000004 c.c. B.E.), for this dose practically never produces a general reaction in this class of case. An increase of dose may then be made at intervals of 48 to 72 hours. Experience enables us to see in a very short time whether we are dealing with a case in which we can go rapidly or must proceed slowly, and in the meantime we do no harm. If time is an important factor we can attempt to differentiate the sensitive cases in one of two ways—that is, either by finding the effect of exertion or the reaction to a von Pirquet's test (Dr. Evans, of San Francisco). If auto-inoculation is readily produced, or a von Pirquet reaction is marked, we know that we must give a minimal initial dose; if it is difficult to produce an auto-inoculation, or if the von Pirquet reaction is feeble,

CHART 7.

we may safely commence with a larger dose and proceed more rapidly.

Subsequent doses.—In this connexion there are two schools: those who believe in producing a general reaction or see no objection in doing so, and those who hold that a general reaction may do so much harm that it should be avoided when this is possible. There is no question that in many chronic cases a general reaction, even when accompanied by considerable fever, which does not last more than 24 hours, is followed by very considerable improvement all round. In such an event, if we wait and then repeat the same dose, we will usually cause a further reaction, but a less severe one. If we wait further and then repeat the same dose again, there may be no reaction, and the patient is, so to speak, over the stile. (See Charts 2 and 3.) We may safely increase the dose until a further reaction is produced. When this occurs we go through the same procedure. In a certain number of instances, however, and especially in those cases in which there is a more or less ready tendency to auto-inoculation, the reaction caused may last for days and even for weeks. When this happens the sensibility of the patient to tuberculin is sometimes much enhanced, and tuberculin treatment becomes more difficult or even impossible. As we have no real guide to the class of case in which a prolonged general reaction is likely to occur, it is best to avoid its production as far as possible. This may mean some delay, but in tuberculin therapy time is comparatively unimportant, and in any case delay is better than possible disaster. A general reaction can usually be avoided by careful observation of the clinical symptoms, as these will give us warning that the dosage is becoming excessive before a general reaction is produced.

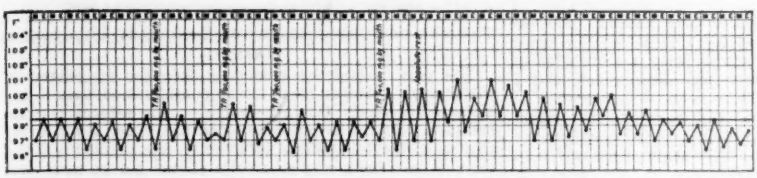
An excessive dose will produce malaise, headache across the

CHART 6.

eyes, excessive focal reaction, as is evidenced by an undue increase of crepitations over the diseased area, and an undue increase of expectoration, and a definite effect on the temperature. Such a dose will either increase the size of the daily excursions of the temperature (whether normal, subnormal, or above normal) or produce a rise of temperature. A particular dose may have this effect more readily at certain times. For example, it is well known that in many consumptive women there is a rise of temperature for, it may be, as long as 14 days before menstruation, which abates as soon as the flow is established. As a rule this rise of temperature may be disregarded, but in some instances a dose of tuberculin when given during this time will be excessive, whereas at other times it produces no reaction. (See Charts 4, 4*a*, 4*b*.) Similarly, we must bear in mind that a dose may produce excessive reaction unless care is taken to limit the amount of auto-inoculation produced on the day on which the dose is given. For this reason it is wise to prescribe rest or merely gentle exercise on the day on which the dose is given. In my experience a general reaction, even in those cases in which it is followed by beneficial results, does nothing which cannot be obtained by doses which fall short of producing it, whereas a general reaction may be prolonged and cause irremediable mischief. To me, therefore, it seems obvious that we should endeavour to avoid a general reaction by avoiding any increase of dose whenever we have evidence—which we usually can obtain by a sufficiently close clinical observation—that we are on the borderline. If we do produce a general reaction, in my opinion it is a wiser policy not to repeat the same dose when the reaction is over, but to mark time with a rather smaller one.

Apart from this it is necessary for the purpose of spacing doses to know what is an ineffective dose and what is an effective dose. *An ineffective dose* produces no focal reaction, and has no effect upon the temperature, and consequently the next dose may be safely increased in size and given at a short interval. *An effective dose* produces a focal

CHART 8.



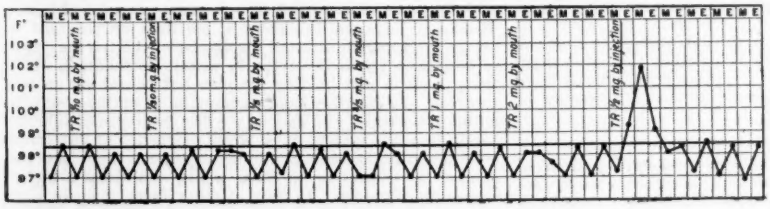
reaction, and so a temporary increase of expectoration, and may cause a lowering of the temperature or a diminution of the daily excursions and so a "flattening" of the temperature (whether sub-normal, normal, or above the normal). An effective dose may sometimes be repeated with advantage, but as a rule—and here experience alone helps us—the next dose should be a larger one, and may be given at two to three day intervals, when the dose is small, or at five to ten day intervals as the dose becomes larger.

The final dose.—Here, again, we have two schools—those who hold that we should aim at large doses such as 20 mg. or more of B.E., or 1 c.c. of O.T., and those who are satisfied with such a dose as 1/10000 mg. (0·00002 c.c.) B.E. My own view is that we should aim at the larger doses. This is not always possible of attainment, for in a number of cases a particular dose, such, for example, as 1/100 mg. (0·002 c.c.) B.E., will always produce a general reaction and it is impossible to increase the dose. Fortunately the results in these cases are often satisfactory.

(2) *In Febrile Cases.*

In these cases tuberculin therapy is still more difficult and

CHART 10.

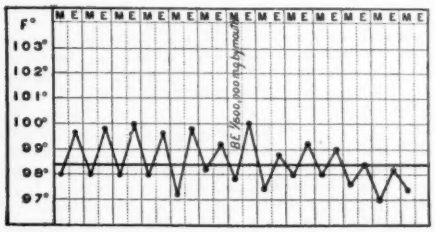


calls for even greater care. The principles of treatment are the same, except that we must use every measure at our hand to prevent auto-inoculation. Here certainly we should avoid any general reaction. The initial dose should not exceed 1/500000 mg. (0·0000004 c.c.) B.E., or (0 0000002 c.c.) T.R., and the increase of dosage must be very gradual. In certain cases benefit follows the repeated administration of the same dose without any increase for a time. Any dose of such a size can only have a transitory effect, and it is therefore necessary that the intervals between the doses should be small, as a rule 48 to 72 hours. I give on the previous page three charts, one from a case of generalised tuberculosis and two from cases of acute febrile pulmonary tuberculosis to show that even here tuberculin may be of great service. (See Charts 5, 6, and 7.)

METHOD OF ADMINISTRATION.

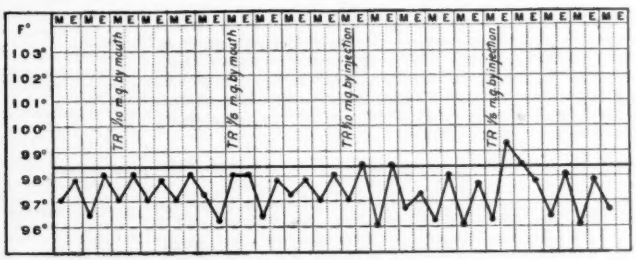
The usual and most satisfactory method of administration is by means of hypodermic injection, and it may be as well to state that it is advisable to utilise different sites for the various doses. Some years back I brought forward, in conjunction with Dr. Spitta and Dr. Inman, evidence to show that it was possible to administer tuberculin T.R. by the mouth under certain conditions of which I gave precise details, and I have had the satisfaction of having my observations confirmed by a number of other workers. I have been subjected to much criticism in this direction, but much of this criticism is due—as so often happens in medical questions—to the fact that views have been attributed to me which I have not expressed. I brought forward the question of oral administration, not as an improvement on hypodermic administration, but as a possible alternative when circumstances made the hypodermic method difficult or impossible. I am told, what appears to be true, that old tuberculin is not absorbed by the stomach. I never said it was. I confined my observations to T.R. Old tuberculin contains chiefly exotoxins and T.R. endotoxins, and the preparations are not, therefore,

CHART 9.



strictly comparable. Again, many of those who contest the absorption of T.R. by the stomach have been at no pains to give the dose in a fluid isotonic with the blood on an empty stomach and without the addition of antiseptics. I emphasised the importance of an empty stomach, and failure to obtain absorption when the dose is given under other conditions is no criticism on my observations. Tuberculin given in this way cannot stimulate the secretion of gastric juice, and the question of digestion does not arise, especially as the chief function of the stomach is absorption. It is quite true that in some individuals absorption by the stomach is unsatisfactory. This I pointed out when I said that absorption could not be anticipated

CHART 11.



when the stomach was disordered or the tongue furred. That satisfactory absorption of T.R. is obtained from the stomach when this organ is healthy and empty—as it is an hour before breakfast—is beyond question in the light of my experience. T.R. given by the mouth produces the same effect on the opsonic index as when it is given by the

hypodermic method, and it produces the same clinical symptoms. (See Charts 8 and 9.) An overdose will give a general reaction, an effective dose will give a focal reaction. Absorption by the stomach is not a variable thing, for I have found that a particular dose, say 1/30000 mg. T.R., given in this manner may produce good results in certain cases, whereas so small an increase as 1/25000 mg. will produce a general reaction. I have seen prolonged reactions in acute cases as the result of the oral administration of 1/1000000 mg. T.R. A dose of any vaccine, however administered, which is followed by a focal reaction must convince any bacteriologist, or anyone with a knowledge of vaccine therapy, that absorption has taken place, and I would ask those who do not believe in the absorption of T.R., without antiseptic additions and on an empty stomach, to repeat my observations and watch for focal reactions, for they will certainly find them. For example, doses given in this manner will produce a reddening of the larynx in laryngeal tuberculosis, and will increase the moist sounds in the diseased area in pulmonary tuberculosis, and will give evidence of focal reaction in other forms of the disease.

I find that it is possible to obtain a marked degree of immunity to tuberculin by oral administration even in cases of advanced disease. It is possible (see Charts 10 and 11) to give tuberculin by the mouth until a dose of 1/30 mg. T.R. is reached, and then to give a hypodermic dose for the first time of as much as 1/30 mg., without producing a reaction. In cases of advanced disease an initial hypodermic dose of 1/30 mg. T.R. would certainly produce a reaction; the fact that it does not when tuberculin has been administered orally for some time affords definite proof that a degree of immunity has been established. These charts show, however, that there is a limit to the capacity of the stomach for absorption of this remedy. If I give T.R. by the mouth until a dose of 1 mg. is reached, and then give ½ mg. as the first hypodermic dose, I always produce a general reaction. In such cases the temperature rises to 101° or 102° F., but the reaction is over in 24 hours. An initial hypodermic dose of ½ mg. in cases with extensive disease would produce disaster, and the fact that it only produces a temporary reaction appears to me to prove the efficacy of oral administration.

Our knowledge of immunity is so small that it is unwise to condemn any method without adequate examination, and I would suggest to my critics that the natural immunity we all possess is not produced through absorption of bacteria or their products by the skin, but through absorption from the alimentary canal, and that it is possible that absorption through the alimentary canal may play a sufficiently large part in the question of immunity to make it worthy of further investigation.

DURATION OF TREATMENT.

Treatment in all cases should be prolonged. Even in those cases in which there has never been any marked constitutional disturbance the duration of treatment should not be less than eight months, and may preferably be put at one year. Each case, in this respect as in others, must be treated on its merits, and it is impossible to lay down stringent rules. This applies especially to cases in which there has been more or less marked constitutional disturbance, and a more or less ready tendency to auto-inoculation. In such the duration of treatment may be 18 months, or even more. By tuberculin we raise the immunising capacity, and our aim is to raise it to the highest point possible for the individual case; we must therefore continue it for some little time after we have arrived at the stage in which even considerable exertion fails to produce any evidence of auto-inoculation. In a number of cases two or more courses of tuberculin may be necessary at an interval of a few months.

NECESSITY FOR COMBINING TUBERCULIN THERAPY WITH OTHER MEASURES.

It is hardly necessary to insist that tuberculin is but one factor in the treatment of pulmonary tuberculosis, and I would not allude to this point if there were not some danger at the present time of too much attention being focussed on this remedy, to the exclusion of all other methods of treatment. In the fight against the invasion of tubercle bacilli into the human body we rely on measures which increase the capacity of our complex defensive forces or capacity for adequate immunising responses or which diminish the call on these forces. Consequently the regulation of exertion, the provision of healthy surroundings, and a constant supply of fresh air and adequate nourishment, each have their place. The treatment of this disease must be regarded sanely and as a whole, and in my opinion is best carried out in the greater number of cases in an institution, as this allows for the most important factor of all—namely, constant medical supervision. Those who preach that tuberculin is the only thing of real importance are doing much to limit the good effects of the present campaign against tuberculosis, not only in its curative aspects, but from the preventive side as well.

THE USE OF TUBERCULIN WHEN SECONDARY INFECTION IS PRESENT.

The part played by secondary infection in pulmonary tuberculosis requires much closer consideration than it has hitherto received. Our knowledge on the subject is fragmentary. So far as my experience has gone, I would say that when the tuberculous infection is the dominant factor there is no reason why tuberculin should not be used with success. It may be of service to attack the secondary organisms simultaneously by means of appropriate vaccines. In many cases, especially those in the later stages of the disease, the dominant factor appears to be the secondary infection rather than the tubercle bacillus. In such cases the use of tuberculin is often disappointing, and in certain instances I think—although I can give no explanation—that after the use of tuberculin there is increased activity of the secondary infection, and to a less extent there is increased activity of the tuberculous process after the use of a secondary vaccine.

In connexion with the question of secondary infection, I would mention that I have seen a certain number of cases of what have been regarded as examples of chronic pulmonary tuberculosis (with to my own knowledge an undoubted history of former tubercle), in which tubercle bacilli have been absent from the sputum for long periods, and in which all the symptoms have been due to secondary organisms. In these cases vaccine therapy often improves the general condition and comfort of the patient to a surprising degree.

CONCLUSIONS.

My experience of the last six years, which includes several hundred cases, has led me to form the impression that the *careful* use of tuberculin gives valuable results in the treatment of pulmonary tuberculosis. Its use is not attended with dramatic effect except in occasional examples of febrile disease or laryngeal tuberculosis, nor does its use tend to hasten the apparent arrest of the disease or shorten the length of treatment required, except in certain instances in which the patient is just holding his own but is making no real progress. On the other hand, tuberculin, in conjunction with ordinary methods, will lead to the disappearance of tubercle bacilli from the sputum in a larger proportion of cases than ordinary methods alone, and in my experience diminishes the number of relapses, or, in other words, establishes a higher degree of immunity. In view of these facts, I agree with those who hold that the best treatment for pulmonary tuberculosis is tuberculin treatment in conjunction with what is called sanatorium treatment, either at a special institution—as is necessary in a considerable proportion of cases—or at home.

CHART 1.—Man, aged 24. Five years' history. Left lung, much fibrosis. Right lung, disease probably of not such long standing as on left side. Tubercle bacilli present. This chart exemplifies the point that in certain chronic cases the dose of tuberculin may be rapidly increased.

CHART 2.—The effect of tuberculin (1 mg. injected subcutaneously) in a case of afebrile chronic pulmonary tuberculosis (two lobes and excavation; tubercle bacilli present in the sputum). It will be noticed that the first dose caused a temporary rise of temperature to 100° F.; the second dose caused a temporary rise of temperature to 100° F.; whilst the third dose produced no rise, but a flattening of the temperature.

CHART 3.—The effect of tuberculin (½ mg.) injected subcutaneously in a case of afebrile chronic pulmonary tuberculosis (two lobes and excavation; tubercle bacilli present in the sputum). It will be noticed that the first dose caused a temporary rise of temperature to 102° F.; the second dose caused a temporary rise of temperature to 100·8° F.; whilst the third dose caused a temporary rise to 100° F.

CHART 4.—Girl, aged 17. Four years' history. Infiltration throughout right lung, and to a considerable extent in upper left lobe. Tubercle bacilli present. The first chart shows the type of temperature on admission. The second chart shows (*a*) improvement of temperature—e.g., after 1/25 mg. T.R.; (*b*) practically no reaction after 1/20 mg.; (*c*) small reaction after 1/10 mg.; (*d*) big reaction after 1/5 mg., which was probably due to the fact that this dose was injected just before the commencement of menstruation; (*e*) marked improvement of the temperature after this reaction; (*f*) sharp reaction after 1/20 mg., although this dose when given previously caused no reaction. The third chart shows no reaction after ½ mg. B.E. (which was substituted for T.R. on account of expense), but a reaction after ½ mg. B.E. which, again, was probably connected with menstruation. In this case at first there was

amenorrhœa. Menstruation is now rather too frequent. There has been a gain in weight of 14 lb. in four months. No tubercle bacilli have been found in the last six examinations.

CHART 5.—Woman, aged 20. Two years' history of illness; infiltration throughout right lung, and in apex of left lung. The temperature in this case was the same as, or higher than, in the first 12 days of the chart. The chart shows the effect of the oral administration of Burroughs, Wellcome, and Co.'s tuberculin W. The temperature continued to be satisfactory.

CHART 6.—Man, aged 26. First seen after a month's history. Acute caseous tuberculosis in upper lobes on both sides. Tubercle bacilli present. Absolute rest for a week produced little effect. The administration of tuberculin by the mouth was followed rapidly by a cessation of fever, and it is possible here to see the effect of each dose given. In a month's time the temperature became normal. The patient was subsequently sent to a sanatorium, and is now at work.

CHART 7.—Man, aged 32. Taken suddenly ill with high fever and rigors. Four days subsequently he was admitted to St. George's Hospital. He was emaciated, semi-comatose, and had occasional rigors. Absolute rest was tried for a week without effect. As the clinical symptoms suggested a diagnosis of acute tuberculosis, the opsonic index for this infection was taken on the seventh day. When the temperature was normal the index was 1·75 and when the temperature was 104° F. the index was 0·73. 1/20000 mg. of tuberculin was administered by the mouth in the early morning of the eighth day. The temperature fell and did not rise again for 36 hours. A further dose of tuberculin of the same size was given and a similar effect produced. It was argued that tuberculin had a definite effect, but that as the effect of the dose wore off quickly it would be advisable to give the dose at shorter intervals—viz., 24 instead of 48 hours. This was done and the temperature fell to normal. The doses of tuberculin were gradually increased and given at longer intervals. The patient recovered and gained 2 st. in the hospital. He was reported to be well and at work two years after treatment.

CHART 8.—Man, aged 19. Six months' history of tuberculous pleurisy. This chart shows the result of oral administration in a susceptible case. Tuberculin was continued in this case with good results.

CHART 9.—Woman, aged 22. Eighteen months' history. Infiltration throughout right lung, and to a slight extent in apex of left lung. Tubercle bacilli present. Under observation without improvement at Northwood Sanatorium for six months. The chart shows the apparent effect of the oral administration of a minute dose of B.E. Subsequently an artificial pneumothorax was induced, and the patient at the present time is having nitrogen injections and tuberculin.

CHART 10.—Man, aged 33. Two and a half years' history. Infiltration apex of right upper and lower lobes and in the left upper apex. Tubercle bacilli present. This chart shows (*a*) a dose of 1/30 mg. T.R. by hypodermic injection, after a dose of 1/10 mg. T.R. has been reached by oral administration, produces no reaction; (*b*) a dose of ½ mg. T.R. by injection, after a dose of 2 mg. T.R. by the mouth had been given without reaction, caused a severe but temporary general reaction with marked malaise.

CHART 11.—Man, aged 35. Nine months' history. Infiltration throughout left lung and in right upper lobe. Tubercle bacilli present. This chart shows that there was no reaction when a dose (1/10 mg. T.R.) was given for the first time by the hypodermic method after a dose of 1/5 mg. had been reached by the oral method.

PROGRESSIVE LENTICULAR DEGENERATION:

A FAMILIAL NERVOUS DISEASE ASSOCIATED WITH CIRRHOSIS OF THE LIVER.[1]

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THE purpose of this brief communication is to direct attention to what is practically a new nervous disease, to which, for reasons which will hereinafter become evident, the name of "progressive lenticular degeneration" may be suitably applied. The disease is familial, in the sense that it frequently attacks more than one member of a family, but it is neither congenital nor hereditary. It occurs always in young people, either in an acute, subacute, or chronic form. As far as my present knowledge goes, it is invariably progressive and fatal, its duration ranging from four or six months in the acute cases to as long as three, four, or five years in the chronic. The clinical symptoms form a complex which, once the physician is familiar with it, can be readily recognised, and is of great interest and importance, constituting, as it does, what may be considered a syndrome of the corpus striatum—a syndrome which has not hitherto been differentiated in this way. The symptoms are: 1. Bilateral involuntary movements of the extremities, upper and lower, and sometimes also of the head and trunk; these movements are practically always of the nature of a rhythmical tremor, occasionally irregular, which increases with volitional movement. 2. Pronounced spasticity, or rather hypertonicity, of the limbs and face and musculature generally, the face being usually set in a spastic smile, while the limbs are in contracture—attitudes resembling those of hemiplegia, with this important distinction, that by an effort of the will the patient can undo these attitudes, so to speak, and can extend and flex his limbs at all joints. 3. In the later stages of the disease true contracture sets in, and this forms a constant feature of the affection. 4. Dysphagia and dysarthria, the latter eventually degenerating into complete anarthria. The dysphagia and anarthria are, in the first instance, due to rigidity of the corresponding musculatures. 5. A degree of emotionalism is often present, the patient responding abnormally to slight stimuli, when his spastic smile may pass into a *rire spasmodique*. As a result of the extraordinary degree of stiffness of the muscles there is often difficulty in maintaining equilibrium, but it is of fundamental importance to note that (6) there is little or no true paresis or paralysis, inasmuch as the patient is able to perform all ordinary movements at all joints, though it may be slowly and rather feebly. In spite of the great degree of motor helplessness to which he is reduced, the result mainly of the hypertonicity and involuntary movements, the abdominal reflexes are conserved, and in a pure case a double flexor response is obtained from the sole of the foot. In other words, where this affection occurs in an uncomplicated form, it constitutes an extra-pyramidal motor disease, the importance of which is apparent not only because of its rarity, but also by reason of the light it sheds on such diseases as paralysis agitans. 7. In some cases certain mental symptoms of a transitory nature manifest themselves and will be referred to subsequently.

The pathology of the disease is as striking as the clinical syndrome. The lesion is a bilateral symmetrical softening of the lenticular nucleus, involving more particularly the putamen; the globus pallidus is implicated to a less extent. Sometimes the external capsule is partly included in the area of disease, whereas the caudate nucleus is scarcely touched directly, and the optic thalamus escapes. Most important of all, in a pure case, the internal capsule is absolutely intact. If the diseased areas are examined minutely it will be seen that a change commences apparently round the lenticulo-striate vessels, as a result of which the lenticular nucleus begins to shrink and atrophy, the laminæ medullares and internuncial fibres become less and less recognisable, while the nerve-cells disappear and neuroglial overgrowth takes their place; but it, in its turn, begins to break down, so that in advanced cases a cavity formation is the result. There is no sign of syphilitic disease of the blood-vessels, all of which are patent; in fact, gross vascular disease is conspicuous by its absence. The lesion has nothing to do with thrombosis in the distribution of a particular artery or arterial branches; on the contrary, the curiously selective action of the morbid agent will be readily appreciated when it is remembered that the lenticular nucleus is supplied from three distinct sources. Yet in this disease one collection of grey matter is singled out, while others in its immediate neighbourhood are untouched. Compared with this bilateral symmetrical degeneration of the lenticular nucleus the other changes found in the central nervous system are slight and relatively unimportant.

What must be considered, however, the most curious and the most remarkable feature of this familial disease is the occurrence of advanced cirrhosis of the liver. This hepatic cirrhosis does not reveal itself by any symptoms during life, but it is constantly found post mortem. It is mixed in type. Syphilis and alcohol as causative factors in its production can be definitely excluded, as far as it is ever possible to exclude anything.

This association in young people of cirrhosis of the liver with bilateral symmetrical softening of the lenticular nucleus constitutes the disease from the pathological standpoint; clinically the symptoms are exclusively nervous.

Progressive lenticular degeneration, as I propose to call it, is to all intents and purposes a disease unknown to the profession. As far as I can discover no case has been recorded since 1890, with the very doubtful exception of one reported by Anton, of Halle, some three years ago, under the title of "Dementia Choreo-asthenica, with Juvenile Nodular Cirrhosis of the Liver." In all probability this is a case of congenital cerebral syphilis. The total number of cases of this disease that have been published amount to six only. Of these, two

[1] The material, of which the present communication is a brief abstract, formed part of a thesis for the degree of M.D. of the University of Edinburgh, for which a gold medal was awarded, July, 1911. A complete investigation of the subject, with a discussion of its problems, is in the press and will be published shortly, fully illustrated, in *Brain*.

(brother and sister) were reported by Sir William Gowers in 1888 under the name of "Tetanoid Chorea, associated with Cirrhosis of the Liver"; one was reported by Ormerod in 1890; three (two brothers and a sister) were reported by Homén, of Helsingfors, also in 1890. Ormerod called his paper "Case of Cirrhosis of the Liver in a Boy, with Obscure and Fatal Nervous Symptoms." Homén described the condition as "a Peculiar Disease occurring in Three Members of a Family in the form of a Progressive Dementia, probably lues hereditaria tarda." All these six cases were fatal. In Gowers's cases (acute) no very definite lesion of the central nervous system was found. In Ormerod's case there was bilateral symmetrical softening in the putamen. In Homén's three cases identical lesions were found. All six cases had marked cirrhosis of the liver. Since 1890 there has been no further light thrown on the mystery of the disease, nor has there been any adequate pathological investigation, so that the subject has remained a *terra incognita*.

During the last six years I have had the opportunity of observing personally four cases of this disease, in three of which I have made a post-mortem examination. The first of these cases came under observation in 1905, and the patient died on July 28th, 1908. At the necropsy the diagnosis which I had made during the patient's lifetime was confirmed; bilateral degeneration of the lenticular nucleus was found, coupled with cirrhosis of the liver. The latter had given rise to no symptoms during life. The second case came under my notice in 1906, the patient dying on March 3rd, 1907. In this case cirrhosis of the liver and a slighter degree of lenticular change were discovered. The third case, that of a patient who was the brother of Case 2, came under my observation in 1907. He died on Sept. 20th, 1910, and in his case identical pathological findings were obtained. The fourth case is that of a patient who came under my notice in October, 1911, and at the time of writing is still living. In addition, the records of two hitherto unpublished cases have been obtained from other sources, so that I am in a position to add no fewer than six cases to those recorded 22 years ago, and as a result of the application of modern methods of investigation, both clinical and pathological, it may be hoped that increase in our knowledge will direct further attention to the elucidation of a disease which from its remarkable nature opens up a wide field for clinical and pathological research.

In this communication I do not propose to do more than sketch the more important clinical and pathological features of the disease, based on a study of my own cases and of the old ones, 12 in all. For a complete description of the disease and discussion of its problems the reader is referred to an article which is in the press and will appear very shortly in the next number of *Brain*.

1. DEFINITION.

Progressive lenticular degeneration may be defined as *a disease which occurs apparently only in young people, which is often familial, but not congenital or hereditary; it is essentially and chiefly a disease of the extra-pyramidal motor system, and is characterised by involuntary movements, usually of the nature of tremor, dysarthria or anarthria, dysphagia, muscular weakness, spasticity or hypertonicity, and contractures, with progressive emaciation; with these may be associated emotionalism and certain symptoms of a mental nature. It is progressive and, after a longer or shorter period, fatal. Pathologically it is characterised predominantly by bilateral degeneration of the lenticular nucleus, and in addition cirrhosis of the liver is constantly found, the latter morbid condition not giving rise to symptoms during the lifetime of the patient.*

2. ETIOLOGY.

Of the 12 cases, the age of the youngest patient at the onset of the disease was 10 years; of the oldest, 26. The average age at onset, calculated from the series of 12 cases, is 15. Seven were males and five females. In four of the latter, menstruation, after the commencement of the disease, became irregular or ceased—an interesting fact, the significance of which is at present obscure. Similar and dissimilar heredity can be excluded in the case of progressive lenticular degeneration. Eight of the 12 cases were familial cases. In my own series of cases there is neither subjective record nor objective evidence of syphilis as an etiological factor, and this is true also of the other reported cases. Homén made a most exhaustive examination of the members of his K—— family, but was unable to obtain any definite or unequivocal data in favour of the syphilitic hypothesis. It is true that with the Wassermann reaction to aid us opportunity should be taken to apply it in any future instances of the disease. Personally I was not in a position to take advantage of it in the only two of my cases which I had the chance to examine after the test was demonstrated to be of value. There is no evidence that alcohol has anything to do with the disease. Exciting causes are conspicuous by their absence. It is noted with almost complete unanimity that the disease comes on in an insidious manner.

3. SYMPTOMATOLOGY.

Two clinical types may be distinguished—one acute or subacute and the other chronic. Symptomatologically there is little difference between the two; the former is associated with some, it may be considerable, febrile disturbance. Three of the 12 cases belong to this group; their duration was 4 months, 6 months, and 13 months respectively. In all three, more particularly in the first, a high irregular temperature was present for a more or less lengthy period; emaciation was unusually rapid; the symptoms were severe almost from the beginning; and the whole appearance of the patient suggested he was seriously ill, as with a fever or any toxi-infective condition.

The shortest of the more chronic cases lasted two and a half years; the longest case is one of Homén's, which went on for seven years. The average duration of the first three of my cases is three and a half years. The average of eight chronic cases is almost exactly four years.

(*a*) *Involuntary movements, tremor.*—Involuntary movements, in particular tremor, form one of the outstanding features of the affection. It is one of the earliest symptoms and one of the most marked. The tremor is a true tremor—i.e., it consists of a regular, rhythmical, alternating contraction of a given muscular group and its antagonists. The rate is increased as a rule by excitement or if attention is drawn to it, or by voluntary effort. In most cases the tremor is more marked peripherally than proximally. The range of the tremor is at first fine, but with volitional movement the excursions become wider, and as the disease progresses, according to the experience of all observers, it becomes worse in every way. In the later stages of the affection it is incessant. In one or two of the acute cases "tonic and clonic spasms" were noted, rather than tremor. In one of these both arms presented slowly changing tonic spasm, greater in the left. Sometimes the movements were quicker, and they were always increased by an attempt at volitional movement. In the legs there were similar involuntary spasmodic movements, and in the trunk. There were occasionally paroxysmal exacerbations of such spasms of a few minutes' duration. I have never seen any movements that could be described as athetotic, or athetoid, in this disease.

(*b*) *Muscular spasticity or hypertonicity.*—All of the 12 cases have been characterised by the presence of muscular spasticity or hypertonicity, which has often reached an extreme degree. It is steadily progressive, and results in the patient being reduced to a state of utter helplessness, unable to use his hands, unable to turn in bed, unable to recover his balance if that is disturbed. As a rule the rigidity is more noticeable at the larger joints. The muscles always feel firm on palpation, even when they are relaxed as far as possible. In the advanced cases there is an extraordinary degree of immobility; the face is fixed, expressionless, or smiling stiffly (Fig. 1). As one of my patients was sitting on the edge of his bed he slowly fell backwards in a helpless fashion, with his legs in the air, unable to relax his hypertonic muscles or to use them to recover his balance. The solitary muscles of the body that do not appear to be implicated in this condition are the extrinsic ocular muscles.

(*c*) *Contractures.*—It is but a step from rigidity to contracture. Contractures are as constant a feature of progressive lenticular degeneration as the involuntary movements, and they become extreme. It may be impossible to straighten the limbs out. Two stages in the process may be noted. The first is the fixation of a limb in a particular position from hypertonicity of the musculature. The patient looks as though he were suffering from a double hemiplegia (Fig. 2), but the condition is one of contracture-attitudes only, for both actively and passively the limbs can be completely extended at this stage. But, secondly, as the result in part of the prolonged maintenance of fixed attitudes, myogenic contracture sets in,

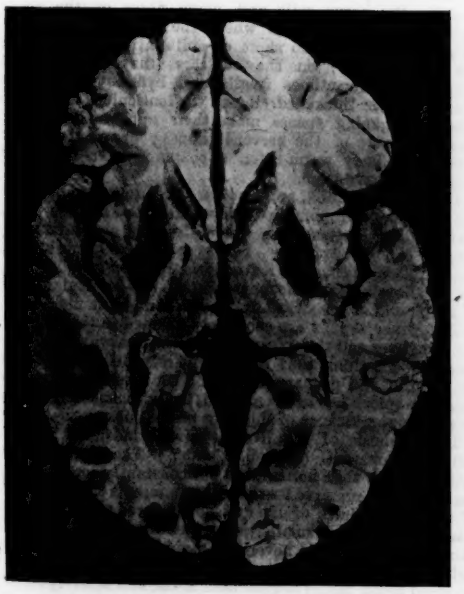
FIG. 1.

General appearance of a patient suffering from progressive lenticular degeneration. Note the fixed spastic smile; the patient is falling stiffly to the right.

FIG. 2.

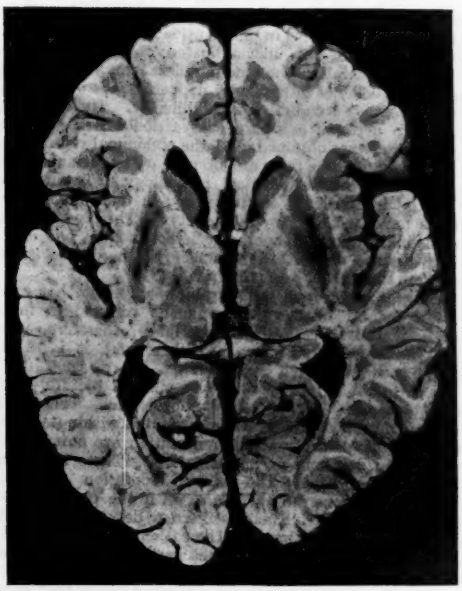
Brother of the patient represented in Fig. 1. The case is more advanced. Note the open mouth, fixed smile, sialorrhœa, contractures. (Exposure 1/250th sec., to counteract effect of never-ceasing tremor of the limbs.)

FIG. 3.



Horizontal section of the hemispheres in a case of progressive lenticular degeneration, showing bilateral symmetrical cavitation of the lenticular nucleus, with conservation of the optic thalami and of the caudate nuclei.

FIG. 4.



Horizontal section of the hemispheres in an earlier case, showing atrophy and commencing disintegration of the lenticular nucleus on each side. The caudate nuclei and the optic thalami are intact, and the internal capsules are entirely unaffected.

and this cannot be overcome. It is apparent that "tonic and clonic spasms," spasticity and hypertonicity, and contractures, are pathological conditions intimately allied to each other.

(*d*) *Dysarthria; dysphagia.*—Dysarthria has been present in every one of the series of 12 cases, and in all it has advanced until it has resulted in more or less complete anarthria, the patient being unable to articulate intelligibly a single word or syllable. Occasionally involuntary sounds or noises or moans escape from the patient. Dysphagia accompanies the anarthria. It is important to note that notwithstanding the anarthria the palate moves on the attempt to phonate, and the tongue is not paralysed. In a pure case these symptoms are, in my opinion, due to spasticity of the muscles necessary for the movements.

(*e*) *Muscular weakness and emaciation.*—While progressive emaciation has marked the course of the disease both in the acute and the chronic cases there is no record of local muscular atrophy. The wasting affects the musculature generally, and is associated, in part at least, with the contractures and the immobility of the limbs. At the same time, it may also in part be attributable to profound disturbance of metabolism, especially in the acute cases, where, although the duration was shorter, the degree of wasting was, if anything, more severe.

In spite of the tremors, rigidity, and contractures, in the majority of the cases a considerable degree of voluntary power remains. In each of my own four cases the patients were still able to walk at a time when their appearance suggested complete spastic paralysis. Muscular weakness, however, is undoubtedly to be observed. Volitional movements are usually resisted with comparative ease. But one ought not to use the term "paralysis" to express it. "Paralysis," where motion is concerned, ought to be confined to diseases of the pyramidal system. Except where contractures or rigidity forbid it, the patient is able to move his limbs. Although the lower facial musculature looks immobile, sometimes the patient can overcome the hypertonicity sufficiently, and he will then move his lips. He is not, therefore, "paralysed." It is unfortunate there is no special term to indicate this specific motor helplessness consequent on disease of the extra-pyramidal motor system.

(*f*) *Sensory system.*—Compared with the motor the sensory symptoms are minimal. Very occasionally there are pains in the body and limbs. Objectively no change in sensibility can be discovered. All of my four cases were carefully examined from the sensory standpoint, with a negative result. There are no sensory symptoms in pure lenticular disease.

(*g*) *Reflexes.*—In an uncomplicated case of progressive lenticular degeneration the tendon reflexes are active but not exaggerated. It not infrequently happens that owing to the contractures they are elicited with difficulty. The cutaneous reflexes are normal; in a pure case a double flexor plantar response is always obtained, and the abdominal reflexes are not abolished. These facts are of primary importance from the standpoint of pathological physiology. Towards the end the organic reflexes are impaired; in fact, most of the patients have become "wet and dirty." This is not to be taken as indicating local sphincter defect such as one meets with in disease of the lower part of the cord (the spinal cords were throughout normal).

(*h*) *Mental symptoms.*—It is a noteworthy fact that some form of mental change is specifically referred to in at least 8 of the 12 cases; its importance, therefore, must not be underestimated. On the other hand, it is highly variable both in degree and in kind. I do not think it forms an integral part of the clinical picture. The term "dementia" is not really appropriate. There is a certain narrowing of the mental horizon, but within its limits the powers of perception and recognition are unimpaired. There are no delusions or hallucinations. There is neither agnosia nor apraxia. The mental condition does not deteriorate or degenerate *pari passu* with the physical condition of the patient. There is often a degree of docility, facility, almost childishness. The patient, especially as the disease is advancing, often becomes easily tickled, pleased, amused. Increase of emotional reaction is not infrequently observed. It may, however, be remarked again that some cases do not show any definite mental impairment at all, while others present mental symptoms that are unique as far as each individual case is concerned.

(*i*) *Symptoms referable to other systems.*—The only system to which reference need be made is the alimentary. Eleven out of the 12 cases showed no signs whatever of disease of the liver during life—i.e., while the lenticular symptoms were present, although in all severe cirrhosis was subsequently discovered. In two cases there was a history of an attack of jaundice some years before the onset of the symptoms of progressive lenticular degeneration, and though these cases are in a minority, the fact is nevertheless of some importance.

(*k*) *Negative symptoms.*—In progressive lenticular degeneration the optic discs are normal; the pupillary reactions are normal; there is no nystagmus; the palate moves on phonation, and reflexly; there are no cerebellar symptoms; there is no impairment of sensibility; the reflexes are not those of pyramidal disease.

4. PATHOLOGY.

In ten cases a necropsy was held. In three of these no definite findings were obtained in the central nervous system, but they were examined more than 20 years ago, and there is no record of a microscopical investigation of the basal ganglia having been made.

In the seven cases with positive findings the appearances are so similar that they afford striking proof of the selective action of some specific morbid agent. They consist of bilateral symmetrical degeneration of the putamen, and of the globus pallidus to a less extent. (Figs. 3 and 4.) Various degrees of this degeneration are found, from discolouration and sponginess of the nucleus, through shrinkage and atrophy to complete disintegration and excavation of the ganglion. The caudate is sometimes rather shrunken, but is never disintegrated; the optic thalamus is practically always normal, except in so far as loss of strio-thalamic fibres may affect its lateral part; the internal capsule in a pure case is intact from end to end. Sometimes the external capsule is degenerated, mainly in its middle or posterior third; the claustrum is usually normal, and the convolutions of the island of Reil are also normal, though sometimes the latter show a certain slight loss of substance. Apart from the lenticular degeneration, the changes in the brain are insignificant. There is no evidence of meningitis. The cerebral cortex offers little definite alteration; the Betz cells are well up to normal numbers and stain well. There is no sign in the modern cases of any small cell infiltration.

The microscopical changes in the lenticular nucleus consist of neuroglial overgrowth, which afterwards disintegrates and breaks down; there is often an immense increase in glial nuclei; the nerve cells and nerve fibres of the normal nucleus disappear. Even where the cavity formation is advanced there are no signs of obliterative endarteritis in the blood-vessels; on the contrary, they are sometimes thinned and sometimes fragile and hyaline-looking. The intima is never thickened. Round the lenticulo-striate vessels small but gaping spaces make their appearance, possibly from shrinkage of the nervous tissues; hence the nucleus presents a finely worm-eaten appearance; this is a stage previous to cavitation.

The pons, medulla, and cord are uniformly negative from the pathological point of view. In the modern cases, certain degenerations consecutive to the main lenticular disease can be traced. These are, in advanced cases, degeneration of the ansa lenticularis, relative atrophy of the corpus Luysii, partial degeneration of the lenticular bundle of Forel, and of the strio-Luysian and strio-thalamic fibres.

Two other organs are commonly affected in this disease—viz., the liver and the spleen. The liver is always cirrhosed, and I do not think that this can be regarded as other than an integral and primary feature of the disease. In several cases the spleen has been enlarged, but without other change. The exact significance of this is at present obscure.

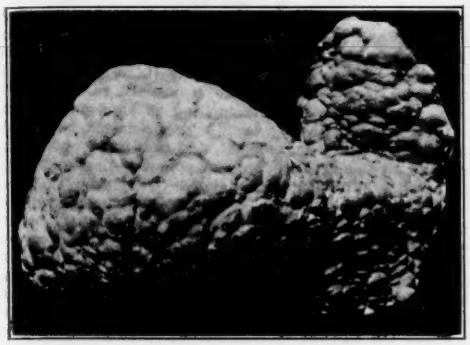
The cirrhosis of the liver is always advanced, and is strikingly apparent. (Figs. 5, 6, and 7.) The organ is usually rather smaller than normal, but not constantly so. It is firm, hard, tends to preserve its shape, and presents the appearance of rounded nodules of liver tissue clustered together, of the size of hazel nuts or smaller, separated by depressed cirrhotic bands. The organ is never bile-stained, but is often rather lighter in colour than normal. Microscopically normal areas, necrosed areas, fattily degenerated areas, and actively regenerating areas are found to be scattered irregularly through the organ. The type of cirrhosis is mixed—i.e., it is mostly multilobular, in some places monolobular, and occasionally there are indications of intralobular cirrhosis. So-called hypertrophying bile-ducts are often seen in the new connective

tissue formation, which in some places is cellular, in others fibrous. In certain of my own cases the pituitary and suprarenal were apparently normal; the thyroid showed certain proliferative and regressive changes.

5. Nature and Pathogenesis of the Disease.

Progressive lenticular degeneration is, I believe, the first definitely established morbid entity whose most striking characteristic is a specific association between disease of one of the viscera and disease of a particular part of the grey matter of the central nervous system—viz., the lenticular nucleus. It is so different, apparently, from most familiar

FIG. 5.

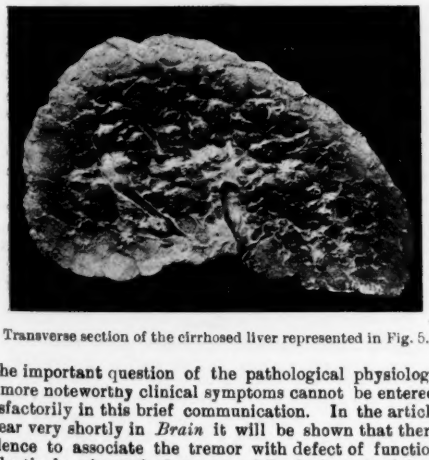


Upper surface of the liver in a case of progressive lenticular degeneration. During life no symptoms of hepatic disease were present.

morbid types as to constitute a class by itself, and there is no other affection with which to compare it. But certain symptoms of the disease furnish a clue to its nature, and there are certain analogies to be drawn from other diseases which may aid in its elucidation. Certain conclusions may be here indicated:—

1. It seems clear that the disease is not due to a congenital or abiotrophic defect; the presumption is strong that the disease is acquired.
2. There is evidence to show that the disease is toxic in origin, but none to suggest that this toxin is syphilitic.
3. It is possible this toxin may be elaborated in the liver.
4. The toxin has a specific action on the lenticular nucleus.
5. The nature of the toxin is speculative. It is almost certainly not microbial.

FIG. 6.



Transverse section of the cirrhosed liver represented in Fig. 5.

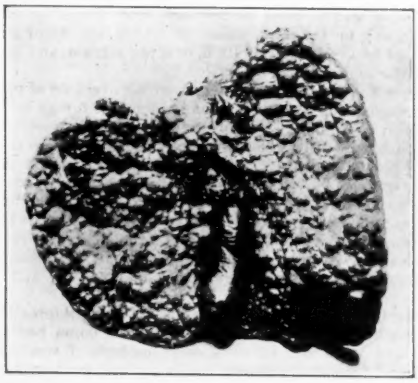
The important question of the pathological physiology of the more noteworthy clinical symptoms cannot be entered on satisfactorily in this brief communication. In the article to appear very shortly in *Brain* it will be shown that there is evidence to associate the tremor with defect of function of the lenticulo-rubro-spinal system, while the hypertonicity and contracture attitudes may be coupled with defect of centripetal impulses on the sensory and motor cortex, arriving *viâ* the strio-thalamic fibres and the external part of the thalamus. In the same article the analogies between this disease and paralysis agitans will be found discussed, and the light which the former disease throws on the problem of the latter will be fully described.

In the disease which I propose to designate progressive lenticular degeneration three desiderata, on which the establishment of a syndrome of the corpus striatum would seem to depend, are fulfilled. The lesions are sufficiently large, in the first place; of sufficiently long duration, in the second; and thirdly, they are confined to the ganglion itself. One of my own cases offers a perfect opportunity of differentiating lenticular from cortico-spinal symptoms. With integrity of the internal capsule and pyramidal paths generally there is bilateral degeneration of the lenticular nucleus, which reveals itself by a train of clinical symptoms amply corroborated by the results of the investigation of a number of other cases, so that a *revue d'ensemble* provides a striking confirmation of the general statement.

The syndrome of the corpus striatum, therefore, here put forward for the first time from a study of this interesting disease, may be expressed as follows:—

In pure uncomplicated bilateral lesions of the lenticular nucleus, and more generally of the corpus striatum, provided they are of sufficient size and of adequate duration, the clinical symptoms are bilateral involuntary movements, practically always of the tremor variety; weakness, spasticity, or hypertonicity (sometimes spasmodic contractions), and eventually contracture of the skeletal musculature; dysarthria or anarthria and dysphagia, and a degree of emotionalism, but without any sensory disturbances; without any true paralysis, and without any alteration in the cutaneous reflexes. If the abdominal reflexes are absent (apart from muscular rigidity) or the plantars of extensor type, then the syndrome is no longer pure.

FIG. 7.



Under surface of the liver from another case of progressive lenticular degeneration. During life no symptoms of hepatic disease were present.

I am under deep obligation to Sir William Gowers, Sir David Ferrier, Dr. J. A. Ormerod, and Dr. H. H. Tooth, of the National Hospital, for permission to utilise their notes on certain cases which were at one time or another under their care in the National Hospital, and for generous assistance in other respects; and I wish also to express my great indebtedness to Dr. W. H. B. Stoddart, of Bethlem Royal Hospital, and Dr. G. W. Smith, of Virginia Water Sanatorium, for assistance in various ways, as well as to others whose help will be specifically referred to elsewhere.

Bibliography (only the original descriptions of the disease are here referred to).—1. Gowers: Diseases of the Nervous System, vol. ii., 1888, p. 656; Review of Neurology and Psychiatry, 1906, vol. iv., p. 249. 2. Ormerod: St. Bartholomew's Hospital Reports, 1890, vol. xxvi., p. 57. 3. Homén: Neurologisches Centralblatt, 1890, p. 514; Archiv für Psychiatrie, 1892, vol. xxiv., p. 191.

Wimpole-street, W.

PLYMOUTH PORT SANITARY AUTHORITY.—At the last meeting of the Plymouth port sanitary authority Mr. William Edward Manderson Corbett, L.R.C.P., L.R.C.S. Irel., was elected chairman for the ensuing year.

THE TREATMENT OF OPIUM POISONING BY THE FARADIC CURRENT.[1]

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ONE or two experiences in the treatment of poisoning by opium have led me to consider carefully the methods of treatment usually prescribed, and especially the value, mode of application, and time of the application of the faradic current.

The treatment of opium poisoning may be divided into the following parts: the evacuation of the stomach; the use of antidotes; the prevention of a fatal somnolence or coma; and the maintenance of adequate respiration. On the first two heads I propose to say very little. The evacuation of the stomach is obviously desirable to prevent the absorption of so much of the poison as has not so far been absorbed; it does not touch what is already in the system. But not only in poisoning by opium taken directly into the stomach, but also in poisoning by subcutaneous injection of morphia, lavage of the stomach is desirable, because morphia appears to be eliminated from the system by the stomach mucous membrane, and, it is said, may be reabsorbed and circulate again.

The antidotes commonly employed are atropine injected hypodermically, and dilute solution of permanganate of potassium, of which large quantities are introduced into and removed from the stomach, while a small quantity is left in. Observations show that the effects of the antidotes are often rather slow in being manifested.

I have rather to consider these cases, or those stages of opium poisoning in which the patient is becoming dangerously comatose, and difficult or impossible to arouse by ordinary measures; in the last phase of which the respiration is reduced to a frequency of 10, 8, or 6 per minute, and becomes irregular and gasping.

Since the chief clinical effect of an overdose of opium is somnolence increasing to coma, which itself may terminate in death by gradual slowing and cessation of respiration, it is natural that efforts should be made to prevent the coma by every possible means; on the understanding, which we have from experience, that a poison like opium, as compared with a structural lesion, is slow in its operation, produces its maximum effects with a rapidity proportionate to the amount absorbed, and gradually loses its influence as a result of elimination. Failing adequate elimination, or neutralisation by antidote, the respiratory centre is involved, and death takes place.

Now in spite of the modern method of antidotes there is no doubt that cases occur in which the coma becomes so profound as to call for some other methods of treatment, at any rate, from those who do not like to stand by without any attempt at succour. These methods are, of course, well known to all, but I will repeat them from a text-book much read some years ago—viz., "Forensic Medicine," by Dr. W. Guy.[2] After advising the evacuation of the stomach by stomach-pump or emetic he says:—

> If the patient is comatose cold water should be freely dashed over the face, head, and neck till he is somewhat roused from the stupor, and he must then be kept awake by causing him to walk rapidly between two assistants, shaking him, and shouting at him. In small apartments, where it is inconvenient to move the patient about, he may be kept roused by flicking the hands and feet with a towel. A current of magneto-electricity passed from the spine through the chest and artificial respiration have been used in extreme cases.

Now no doubt there is an appearance of pure empiricism here, because the treatment by rousing is directed to preventing the onset of a condition which is not in itself fatal; and if it were the fact that opium attacked the respiratory centres and slowed the respiration fatally without first causing complete coma, no amount of keeping awake or rousing would of itself be effective to prevent death. Experience, however, shows that the respiratory difficulty is not pronounced or dangerous until the patient is deeply comatose, and hence the "rousing" method may seem to have its justification. The amount of rousing need only be proportioned to the apparent dose of the poison, but, of course, it can easily be conceived that a dose may be so large as to prevent any response of the cerebral centres to the stimuli applied.

While, however, most writers recommend stimulations of the surface, both directly mechanical and electrical, either for the purpose of rousing the patient from his somnolence, or of exciting his respiratory centres, there are some who regard the whole of this procedure as not only useless, but barbarous; and even among the former class the excessive use of stimulation, whether mechanical or electrical, is deprecated, on the ground that it may exhaust the strength of the patient.

To some of the objections to external stimulation I should agree, or rather I accept the objections to some kinds of external stimulation. I think that it is not expedient to walk a patient about who is poisoned by opium, because if the dose is at all large there will inevitably come a time when he will be unable to stand, even though supported by two friends or policemen; and up to this stage he is not really in danger from failure of the respiration. Other stimuli, such as shaking the patient, shouting at him, pinching him, or flicking him with wet towel-ends, or dashing water over his face, are not very efficient, and can, in my opinion, be replaced by the faradic current applied indiscriminately to all the muscles of the trunk or limbs.

The faradic current has been advocated on two grounds—one that it will help to "rouse" the patient by general peripheral stimulation; the other that it will excite the respiratory centre. As a general peripheral stimulant it is directed to be applied to the limbs sharply; by some writers the use of the wire-brush electrode is specified as being more directly stimulating to the cutaneous nerves. As to the time at which the faradic current should be used few directions are given. One writer orders it when the patient is somnolent, a condition which is probably implied by other writers when they give no directions at all, since somnolence, less or more, is the chief evidence that the poison which has been taken is beginning to operate. Some writers only refer to faradism in connexion with failing respiration; and some of these again recommend galvanisation of the phrenic nerves, without giving directions as to how it is to be done.

For further information on this subject I have referred to some works on electro-therapeutics. In Dr. Lewis Jones's standard work on this subject[3] I find under the head of "Cardiac Failure" the following:—

> The aid of electricity is often invoked for the purpose of resuscitation when death appears to be imminent. It may be applied either in the form of brisk general cutaneous stimulation, as in cases of narcotic poisoning, or with the special object of stimulating respiratory movements or of acting upon the heart itself.

He then goes on to say that application to the cardiac region does not readily affect the movements of the heart, and the results, if obtained, are as likely to do harm as good. For stimulation of the respiratory centres he recommends an induction coil with a long secondary wire, and a metallic brush electrode, applied indifferently to any part of the body, as this method of application is much less likely to produce fatigue or exhaustion than the use of moistened electrodes. He then gives directions for the stimulation of the phrenics in the neck by means of an induction coil with small moist electrodes, and says that it has been successfully carried out in asphyxia and in chloroform poisoning. These general directions may be taken to cover the case of opium poisoning, but this particular contingency is not separately considered.

In a recent American work on Electro-therapeutics[4] the author says that paralysis from opium, stramonium, arsenic, &c., is to be treated by general faradisation. But I find nothing about the treatment of narcotic poisoning, or of the narcotic effects of opium, or about stimulation of the phrenic nerves.

Cases.

CASE 1.—My first case occurred more than 20 years ago, when I was called in to see a gentleman, aged about 33, who had taken a quantity of tincture of opium. He was already in charge of two medical men; he was becoming worse; walking him about had not met with any material success, and he was lapsing into a condition of complete coma. I have no notes as to his pulse or respiration, and am therefore unable to say the exact limit of danger

[1] A paper read before the Therapeutical Section of the Royal Society of Medicine, April 16th, 1912.

[2] Third edition, 1868, p. 506.

[3] Medical Electricity, fifth edition, 1906, p. 460.

[4] Kassabian, Philadelphia, 1907, p. 118.

which he reached. But it occurred to me that if exercise of the muscles was a factor in rousing the patient, and possibly in eliminating the poison, a similar result could be obtained by faradising the muscles and thus getting their frequent and repeated contraction. I procured, therefere, a small Gaiffe faradic battery, which I still have in my possession, and we applied the poles to the muscles of his limbs and trunk indiscriminately with great diligence. After 15 or 20 minutes the battery became exhausted, and it was recharged with the usual quantity of mercury sulphate. After another similar period it had to be charged again. But during this third dose the patient had become so thoroughly aroused that there appeared to be no fear of his relapsing, and he ultimately recovered completely.

CASE 2.—My second case is as follows. A gentleman, aged 33, had had attacks of abdominal pain over about 18 months at intervals of three, four, or five months. Each attack lasted from 24 to 36 hours, and there had been five or six such attacks. A physician had seen him six or seven weeks previously, and said he probably had gall-stone. One evening he went to the theatre, and on his return had some cocoa; he woke up on the following morning with pain in the umbilical region, and some morphia was given. He still had pain the next day, and was frequently vomiting bile. He saw the same physician again on this day, and a gall-stone was again regarded as the cause; but there was no jaundice, and he got a little better. On the following day the abdomen was supple and painless to manipulation. He referred pain to the lower part of it, and there appeared to be some difficulty in micturition. On the next day, again, the pain returned; this was again referred to the liver, abdomen, and vesical region, and there was some difficulty in micturition; the flow of urine was twisted or subsided into a dribble; there was no blood with the urine, and it was alkaline. He had some pain in the testes. At 7 P.M. his medical man gave him an injection of morphia to relieve the pain, and I was afterwards sent for to see him. I arrived at the house about 11 P.M. and I spent some time in the dining-room with the medical man hearing the history and the abdominal symptoms, so that we did not see the patient in his bedroom until 11.20 or 11.25.

Directly I got into the room I saw that the patient was in a very serious condition; he was lying low in the bed, was dusky grey in the face, and his breathing was shallow and scarcely perceptible. The pupils were contracted and he had every appearance of being heavily under the influence of morphia. Later it appeared that the servant had reported at 9 P.M. that "the master looked pinched up like an old man." The medical man stated that he had given him one-third of a grain, and it certainly struck me that he was curiously vague as to the quantity he had actually given. However, on seeing his condition, I at once pointed it out to the medical man, and we started doing artificial respiration. It was not till 12 P.M. that we got the first independent inspiration, but this was not sustained, and on any relaxation of the artificial respiration he stopped breathing again. The pulse throughout was good—such is my note, but I have not recorded its frequency. About 12.15 his muscles resisted a little, his arms became rigid, and his eyelids moved. He breathed spontaneously for a time, but again relapsed. About this time we injected 1/50th of a grain of atropine and in ten minutes another 1/50th of a grain. From the first I had suggested the desirability of getting a faradic battery, but it was midnight, the medical man did not possess one, and we were four miles from my house. After a time, however, we succeeded in getting a battery, and at about 12.20 or 12.25 we were able to apply a strong faradic current to the limbs and trunk of the patient. The effect of this was that he was soon roused, but soon again relapsed; he often threw himself over to one side, but at once fell heavily to sleep again.

We continued the artificial respiration till 1 A.M. and the battery alone for another quarter of an hour. Finally, at 1.15 A.M. the patient jumped up, got out of bed, and sat on the floor on the far side of the bed, crying out "I shan't play any longer; what are you doing?"—obviously distressed by the skin and muscle sensations. After this for a time he was wide awake, and only at about 1.40 went off into a sleep, from which he could be easily aroused. The medical man stopped with him for another hour; I left at 2 A.M. The following day he was well and free from pain; the abdomen was supple and nothing could be felt in it.

Now I have no doubt that the recovery of these two patients was due to the action of the faradic current in great part, if not entirely. It is conceivable that by steady persistence in the artificial respiration we might in each case have kept the patient alive sufficiently long for the elimination of the poison, but it is quite obvious that the process was very much hastened by the faradic stimulation.

What is to be noted is, first, that the faradic current was applied to the surface, not by wire brush electrodes, but by small moist electrodes, and this was done with the object of causing muscular contractions, and not merely to stimulate the skin. Secondly, that these stimulations were continued perseveringly, in the first case for at least 40 minutes, if not more; in the second case for 50 minutes. Thirdly, that there was not the slightest evidence of any exhaustion as a result of this process. Fourthly, that it had every appearance of directly contributing to the disappearance of the somnolence, and the restoration in the second case of the respiratory functions, although it is true it was preceded by, and continued with, artificial respiration.

It is, of course, interesting to consider whether it acted by *rousing* the patient, at the vagueness of which conception I have already hinted; or by stimulating the respiratory functions; or by hastening the elimination of the poison. It was with this last idea in my mind that I persevered in its use on the first occasion, thinking to myself that the ambulatory process which was always recommended, and which had already been pushed to its limits, possibly acted in that way; not, I must confess, having thought deeply of the mode of elimination of alkaloids in general and of morphia in particular; or on the other, of the chemistry of muscles and muscular action. From modern works on pharmacology [5] I gather that opium is eliminated principally by the alimentary canal; that it has been found in the saliva, and in the stools of a morphinist; and that Alt recovered from the stomach one-half of the amount used in a subcutaneous injection; and it has been detected in the fæces after hypodermic injection. It also passes into the urine, bile, and milk, and perhaps into the sweat. Dr. Dixon, however, says that morphine is entirely excreted by the alimentary canal, and only the merest trace is excreted by the urine [6]; and later, he says, by the whole alimentary tract.

Its elimination by the stomach renders it expedient that lavage, whether with or without potassium permanganate, should be employed more than once during treatment, in order to prevent its reabsorption and renewed circulation in the blood; but so far as the alimentary canal beyond the stomach is concerned one must rely upon some potassium permanganate reaching it, or more likely leave it to chance, or to some other antidote, such as atropine.

If strychnine or atropine is taken, it appears that a small quantity is oxidised in the body, but I can find no similar statement with regard to opium. In any case, it would seem that if muscular contractions have anything to do with the elimination of opium, it may be by quickening the circulation through that system of the body; but that it is not by any extensive chemical changes, whether of oxidation or otherwise, that the removal of the poison is hastened.

It will naturally be asked whether I recommend this treatment in all cases and all stages. My answer would be that whenever the poison causes a degree of somnolence from which the patient cannot easily be roused, by moderate or determined shaking, the faradic current should be applied to the body and limbs. In proportion to the degree of stupor should be the time during which it should be continued; and when the breathing is slowed and becomes gasping it should be nevertheless continued and persevered in until the patient is roused and the breathing is restored to the normal, or nearly normal, condition. Artificial respiration should be performed at the same time, but I am sure from what occurred in my second case that the faradic current is a most valuable addition to the procedure, whatever may be its *modus operandi*.

Of course, there is great variety in the severity of the symptoms in cases of opium poisoning, dependent on the amount of opium taken, the time allowed to elapse before the commencement of treatment, and other considerations.

By the kindness of my colleagues at Guy's Hospital I have been enabled to analyse the reports of cases treated at that institution during the last 14 years, 1898–1911 inclusive.

[5] Whittans: Manual of Toxicology, 1910, p. 972.
[6] W. Dixon: Manual of Pharmacology, second edition, 1908, p. 129.

The cases are 55 in number, of which all recovered but three. Making a rough estimate as to the degree of severity, I have divided them into three groups: one of cases in which the symptoms were mild and never really threatening, and these formed just over two-fifths of the whole—namely, 23; a second group equal in number in which the symptoms were more pronounced, and recovery was slower; and a third group, in which the symptoms were pronounced or dangerous, numbering 9, or a sixth of the whole. In this last group are, of course, the three fatal cases. Now, it is interesting to observe that the only cases in which I can find any mention of the use of the battery or faradic current are those three fatal cases. This, of course, might be taken to show that the faradic current did harm, or even killed the patients by exhaustion, but a careful consideration of the cases will, I think, show that this view cannot be held. The real explanation, no doubt, is that the faradic current was only used in the cases which appeared to be of exceptional severity or were not amenable to other means. I will briefly account for them all.

1. The first case was that of a man aged 24. He was admitted into the clinical ward, and nobody knew whether he had taken any poison or not; but he was said to have had drinks with some friends, and he had fallen in the street two hours before admission. It was said also that a medical man had seen him and injected something into his arm. He came in at 4 A.M. as a dying man, extremely collapsed, cold skin, blue lips, contracted pupils, slow irregular pulse, and irregular respirations, 9 to the minute. He rallied a little with warmth and strychnine, and at 5 A.M., the diagnosis still uncertain, the stomach was washed out, and the faradic current was applied about 5.30 and used vigorously for 20 minutes. The effect does not appear to have been marked, but the battery was used several times subsequently. In spite of this he died at 2 P.M. Artificial respiration was used for a short time before his death. An analysis of the stomach contents showed that opium was present; otherwise the organs were healthy.

2. The second case was admitted into the same ward only a few days later. A man, aged 63, was found unconscious one hour before admission, having in his pocket a 2-oz. bottle, containing a few drops of tincture of opium, the remains obviously of a larger quantity. He was admitted into the surgery at 7.15 P.M. profoundly unconscious, insensible to all stimuli, breathing regularly but stertorously, 16 in the minute. The pulse was full, regular, 80; the pupils very small, not reacting to light; corneal reflex was good; the limbs were quite flaccid. The stomach was washed out with water, and then with solution of potassium permanganate. He made no sign whatever. He was in the ward at 8.15, and a strong faradic current was applied to the face, trunk, and limbs indifferently for a period of at least two and a half hours, and probably longer, by relays of energetic clerks. The pulse began to fail at 9 P.M., Cheyne-Stokes breathing supervened, and he became more cyanosed. Artificial respiration had no effect, but I find no note as to the time at and during which it was used. Half an hour after midnight he died. In addition to the above he had inhalations of oxygen, coffee enemas, and hypodermic injection of 11 minims of liquor strychninæ in divided doses. Post mortem he was found to have fatty degeneration of the heart.

3. The third patient was a man between 40 and 50 years of age. He was found in his room in a comatose condition. The medical man first summoned washed out his stomach, and sent him to the hospital. He was admitted into the clinical ward on Nov. 29th, 1906. He was comatose, with cyanosed face, pin-point pupils, absent reflexes, subnormal temperature, and slow, stertorous, irregular breathing. Three minims of liquor atropinæ were injected subcutaneously. He did not respond to slapping with towels, &c., and so he was faradised. To the best of the clerk's memory at the present time, he was faradised for an hour, or an hour and a half, but the report states that after about 20 minutes the breathing was more regular and the corneal reflexes returned. Oxygen inhalation and strychnia by hypodermic injection were administered, and the faradisation was stopped. But as the breathing again became worse, and the reflexes weakened, he was again faradised; and this, with a subcutaneous injection of ether and inhalation of oxygen, improved the breathing and the pulse. Subsequently the pulse failed, and he died. Morphia was found in the washings from the stomach and in the stomach after death.

In reference to the failure of treatment in these three cases I should offer the following considerations:—

First, that in none of these cases have we any certain knowledge of the quantity of morphia employed; the elderly man who died had a 2-oz. bottle in his pocket containing a few drops of laudanum, and he probably took a large quantity. It must always be conceivable that the quantity of poison may be so large that no measure of neutralisation, or of support to the natural powers, while the poison is being eliminated, will be sufficient in the time. In the young man who died it is not clear that the current was used continuously for a very long period, though it was used frequently. We have no note of its effect upon the respiration. The patient was regarded as a dying man on admission, but for an hour, in consequence of the uncertainty of the diagnosis, no specific treatment for opium poisoning was undertaken. In the last case the faradic current distinctly improved the respiratory function on two occasions; but after the first success it was stopped, and apparently after the second as well.

If the battery is on account of these three cases condemned as useless, so none the less are all the other remedies employed—potassium permanganate, atropine, and stimulations of all kinds.

In this series of hospital cases there were others with a high degree of poisoning in which the patients recovered without the use of the faradic current. In many of these, in spite of the use of potassium permanganate or of atropine, it was not considered safe to leave them alone without taking stronger measures; but we find such notes as these: "Walked up and down for two hours with short intervals." "Nurse attended to prevent her sleeping; kept awake with great difficulty, walking for an hour or more." "Sleepy; rubbed and slapped; with difficulty kept awake, and later had to be walked about." "Slightly drowsy, walked about for two hours." "Found drowsy, soon unconscious, made to walk up and down for some hours." "Drowsy; friends told off to keep him awake." "Drowsy, falls asleep, constant attention to keep him awake."

I can at present see no reason why, in conditions like this, we should not apply the faradic current to perform the function which constant waking by slapping, or by compelling the patient to perambulate the room, undoubtedly discharges.

The experience of cases shows that the unfavourable condition of somnolence may be increasing some hours after the ingestion of the poison, that it will increase again after temporary amelioration by lavage or "rousing"; and I cannot think it is safe to leave a patient semi-comatose until the difficulties of his respiration excite you to perform artificial respiration. I believe that he should as soon as possible be roused or awakened, and kept aroused until it is morally certain that the sleep will not pass again into a serious condition of coma. And this I believe can be done, by the faradic current, as efficiently, with as little brutality, and as quickly, as it can by any other means.

In cases in which the coma has reached a stage threatening life I think the faradic current should be applied persistently, in spite of the entire want of response during the first 30 or 40 minutes, other than the contraction of muscles.

As to the battery employed, I do not think there is any need for an electric current of exceptional strength. My first case was treated by a current from a small Gaiffe battery of which the elements are two zinc plates less than 30 mm. square each, 35 to 40 grains of mercury sulphate, and a coil measuring 2¾ inch by 1 inch; the whole apparatus can be carried in the coat pocket. The other case was treated by a portable faradic battery, such as is usually employed by the general practitioner.

I have made no lengthy research into the literature of the subject outside manuals and text-books, but remembering the numerous papers on toxicology written by my old teacher, Dr. Alfred Swayne Taylor, I referred to former volumes of the Guy's Hospital Reports, and I find amongst his "Cases and Observations in Medical Jurisprudence,"[7] a record, of which the following is an abstract:—

On Dec. 16th, 1864, a girl, aged 11½, took at 6.45 P.M. 1½ oz. of laudanum in mistake for black draught. The usual symptoms of opium poisoning rapidly developed, and in spite of washing out the stomach, walking her about, and talking to her, she became quite comatose at 1.30 A.M., the breathing being 6 to the minute and stertorous. Electro-magnetic shocks were then applied, and roused her so that she was able to take some belladonna, in the form of the extract dissolved in water, and this was repeated by mouth or rectum six times in the next three hours. For some time there was no change, but she gradually improved, the stertor lessening and the breathing becoming more frequent.

The following note is of interest in the present connexion:

After coma came on, no attempt was made to walk her about, but it was observed that when she had had several electro-magnetic shocks, she would make an effort to push herself off the couch and attempt to stand, but immediately relapsed into a profound sleep.

Wimpole-street, W.

[7] Vol xl., 3rd series, p. 287.

MANCHESTER ROYAL INFIRMARY.—The summer course of post-graduate demonstrations at the infirmary will begin on Tuesday, May 7th, when a medical demonstration will be given, to be followed by a surgical demonstration on Friday, May 10th. These demonstrations will be held at 4.30 P.M. on each Tuesday and Friday throughout the summer session, with the exception of Whit-week.

NOTES ON UTERINE HÆMORRHAGE,

WITH SPECIAL REFERENCE TO THE ABUSE OF THE CURETTE.[1]

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PERHAPS in the whole domain of gynæcology there is no symptom which presents greater difficulties in the successful elucidation of its cause than pathological uterine hæmorrhage. I do not refer to the bleeding that occurs in association with the various uterine neoplasms, be they malignant or benign; or yet again to the hæmorrhages that are related to abnormal pregnancy, labour, or the puerperium. I would rather consider a group of cases where hæmorrhage is a prominent symptom, and where gross physical signs are remarkable by their absence. Many of us are familiar with this group, but when pressed for an explanation of the phenomena how little do we know? The page is a blank one in the annals of gynæcological pathology, and too often an attempt is made to cloak our ignorance under the veil of those well-known words "endometritis" and "chronic metritis."

Now what is the common course of events when such a diagnosis is made? For a short time perhaps various drugs are administered, agents such as ergot and hydrastis, which time has shown to be effective in sometimes controlling uterine bleeding. Should these fail, as is not infrequent, curettage is undertaken. A certain proportion of patients derive much benefit from this little operation. This group is made up largely of those cases where the bleeding is secondary to a polypus, or to localised or diffuse overgrowth of the glandular elements in the endometrium, a condition to which the term "adenomatosis" may well be applied. If careful statistics are kept and after-results noted, it will be found, however, that a certain number of cases exist which derive absolutely no benefit from repeated curettings. Furthermore, there is very little doubt that in a small proportion the symptoms are aggravated and made worse by the operation. These facts may be illustrated by a consideration of the after-histories of a consecutive series of cases noted at the General Hospital, Birmingham. By reference to the case-books I found that between the years 1908 and 1911 the number of cases of endometritis treated by curetting at the General Hospital was 52. These patients were written to, and special emphasis was directed to the question of uterine bleeding. The usual difficulty arose in tracing addresses and obtaining answers, but eventually 32 satisfactory replies to the questions were forthcoming. Of these 32, the number cured was 20, whilst 12 replied that they had obtained no relief from the operation. Two had been curetted twice and three thought that their symptoms were worse, in that, in addition to hæmorrhage and discharge, they now had pain. The results of curetting as regards hæmorrhage, when spread over the four years, are shown in the subjoined table:—

	1908.	1909.	1910.	1911.
Replies received... ...	3	10	10	9
Cured	1	8	5	6
Unrelieved	2	1	3	3
Worse	—	1	2	—

In this table the percentage of cases unrelieved by curetting works out at 37·5 per cent. This percentage is probably too high, as the number of cases involved is small. I therefore refer you to a paper on the results of curetting in cases of chronic endometritis, by Dr. A. Donald and Dr. W. Fletcher Shaw, in the Transactions of the Obstetrical Section of the Royal Society of Medicine, 1910. This article deals with the after-results of 267 curettings, one year at least having elapsed in each case since the operation. On the present occasion we are only concerned with those results affecting uterine bleeding. Under the heading menorrhagia I find that from a total of 112 patients 20·5 per cent. showed no improvement after curetting. Analysing this percentage a little more in detail, in both married parous women and virgins the percentage of failures is the same—viz., 22·7. In the case of sterile married patients the percentage is only 12·5, but the number of cases quoted is about half that of the former group, and the figures are therefore possibly too low. Similarly, where metrorrhagia was a prominent symptom, it was found by the authors quoted that out of 42 patients 19·1 per cent. received no benefit from curetting. Without referring further to statistics it will be evident that curettage fails to cure at least 20 per cent. of cases involving uterine bleeding, and usually classified as "chronic endometritis." It is this 20 per cent. of failures that I propose to discuss in the present paper.

The first thesis that I would bring forward is that in very many of these cases the terms "endometritis" and "metritis" are misnomers, and that we are here dealing with a variety of conditions very different in their etiology, pathology, and treatment. At the present day we converse freely about many different kinds of endometritis—glandular, interstitial, senile, and so forth—without possessing any concrete notions as to the pathology of the same. I earnestly wish that the name might be applied solely to a definite inflammation of the uterine wall, and that uterine terms might be thus co-related with those employed in general pathology. Change is effected but slowly, and the tendency is to be most conservative in the use of old and convenient terms, even though they rest upon a very frail pathological basis. Perhaps the latest, and most important, advance is the demonstration by Adler and Hitschmann, that many of the changes in the endometrium formerly classified as "glandular" and "interstitial endometritis" are but physiological manifestations occurring in the menstrual cycle and that they are normal phases of the healthy uterus. This theory has received wide support, and it is now contended by several gynæcologists that before any expression of opinion can be made upon the appearance of curettings it is essential to know when the last menstrual period occurred. Endometritis in the true sense of the word is probably much less common than is generally thought. A common custom has been to compare "endometritis" with the formation of adenoids in the naso-pharynx, but before the term and comparison can be accepted it must be proved that the hyperplasia in each is really of inflammatory origin, and the exciting cause must be identical.

Bacterial infections of the uterus.—With a view to discovering the cause of certain cases of uterine hæmorrhage it has been my custom for some months to collect the uterine blood, with full aseptic precautions, and to submit it to a bacteriological investigation. It is not my intention on the present occasion to give a detailed account of the technique employed, as a full report will be issued at a later date. The results so far obtained are, however, extremely interesting, and tend to prove that the uterus, like the female bladder, *is* from time to time invaded by micro-organisms. The general opinion held at the present day is that the uterus is germ-free, and that the os externum forms the barrier between the infected and non-infected areas of the normal genital tract. This fact was accepted after the researches of Stroganoff, Menge, Walthard, Kroenig, and Döderlein, and the theory was put forward that the secretions in the vagina and from the cervical glands had a definite germicidal action. That the conditions in the puerperal state are altered and that infection can then easily occur is, of course, generally recognised, but it is not so universally appreciated that infection of the non-pregnant organ also occurs. Gonorrhœal endometritis has been beautifully demonstrated by Döderlein and Wertheim, but infections with other germs in the non-pregnant uterus have not been emphasised to the same extent.

I wish now to draw attention to a section of some curettings removed from a single patient, aged 34, on account of severe menorrhagia of three months' standing, arising without obvious cause and unassociated with any other symptom. The presence of considerable numbers of a bacillus between the cells may be noted. This bacillus was cultivated, and it showed the characteristics of bacillus coli when grown on the ordinary media. It was also found uncontaminated in blood obtained from the uterus previous to the curetting. We have here apparently an example of uterine infection by a coli-form organism, comparable to the similar "coli" cystitis of the bladder. I have found a coli-form bacillus in blood from the uterus on three occasions, twice in pure culture and once in association with pyogenic cocci.

[1] A paper read before the Birmingham Branch of the British Medical Association on Feb. 8th, 1912

The first case that drew my attention to the bacillus in relation to the uterus was a patient aged 34 years, who was admitted to the General Hospital, Birmingham, on account of irregular uterine hæmorrhage, and a very foul discharge of some months' duration. Curettage was performed, and at the same time cultures were taken from the uterus. All the inoculated media showed bacillus coli in an uncontaminated infection. A short time after the operation a parametric abscess developed, and the pus again contained bacillus coli. Of course, it is possible that the curetting lighted up an old focus, but the more probable theory to me is that during the curetting, lymphatic vessels were opened, and the germs directly inoculated into the tissues from the endometrium.

The third case referred to was one of uterine hæmorrhage unrelieved by curetting a few months previously. Bacillus coli and staphylococcus albus were found in blood obtained from the uterus. A second curettage was therefore not performed, and the patient has since made a very good recovery under repeated intra-uterine injections of hydrogen peroxide.

It seems to me that in the case of the uterus we have a good means of estimating which cases are true bacterial infections—viz., by a bacteriological examination of the menstrual blood. The desideratum, of course, is that such material must be collected aseptically, and a rather elaborate technique is necessary to effect this in a satisfactory manner.

Infections due to germs other than gonococci and bacillus coli have been demonstrated, but sufficient has been said to indicate that curettage in an apparently simple case of menorrhagia is not unmixed with danger, and routine curetting is certainly to be condemned. Sooner or later, bacterial infections will be encountered, and an inflammation limited at first to the endometrium will be converted into one involving the metrium or the parametrium.

I wish now to draw attention to another cause of uterine bleeding—viz., hæmorrhage due to defects in the vascular system, and having no connexion with the endometrium—conditions not infrequently, however, diagnosed clinically as "endometritis" or "chronic metritis." This bleeding may occur in the following manner: (1) by rupture of arterial vessels which are the seat of degenerative changes in their walls; (2) as a local manifestation of increased arterial pressure; (3) as a result of venous congestion, due to portal obstruction; and (4) secondary to chemical changes in the fluid contents of the blood, or in the epithelium of the capillaries, which allow increased transudation through the vessel walls.

Hæmorrhage secondary to arterial degeneration.—The first group I believe to be not uncommon, and it is probable that many of the severe hæmorrhages that occur about the age of the menopause are due to this cause. I think that some of these hæmorrhages are comparable to the bleeding that occurs from ruptured degenerated vessels in the brain, and for want of a better name I propose to call the condition "uterine apoplexy." The term appears to express the pathological basis better than "chronic metritis," which one so frequently hears in connexion with this type of bleeding. Under a microscope I have placed a section taken from the wall of a uterus which I removed from a woman, aged 43 years, on account of repeated and dangerous hæmorrhages. To the naked eye the organ showed little; it was small, the endometrium was smooth, and no obvious cause for the bleeding could be adduced. However, in the section it may be seen that the walls of the blood-vessels are much thickened, some hyaline degeneration is present, and blood cells are found in the interstices between the muscle fibres. In advanced cases of this type the vessels are so thickened an hard that on section of the uterus they are seen standing up in marked relief at the junction of the outer and middle thirds of the wall. When rupture of such a vessel occurs blood is dispersed between the muscle fibres and finds its way to the endometrium. Small petechial spots are sometimes seen in the endometrium of uteri the seat of this condition. I have also on one occasion noted minute aneurysmal dilatations in the course of vessels in the uterine wall.

Hæmorrhage associated with endarteritis syphilitica uteri.—The relation of syphilis to changes in the walls of the arteries in the uterus is interesting, and undoubtedly cases occur where it is an important factor in the etiology of the same. In more than one uterus that has been removed on account of dangerous bleeding I have noted vessels which exhibit all the characteristic changes of syphilitic endarteritis. The tunica intima in these vessels is much thickened and the lumen diminished. Why hæmorrhage should occur is not very evident. One might expect that the more probable result would be thrombosis, as in the case of endarteritis syphilitica of the cerebral arteries. A possible explanation may be that the hæmorrhage is secondary to the general increase of arterial pressure dependent upon the narrowed lumen in the vessels affected by the syphilitic toxin. It is not uncommon to note hyaline and fatty degeneration in the uterine tissues in close proximity to the thickened vessels, and this I regard as analogous to the cerebral softening noted in similar lesions in the brain. The condition is a degeneration, and is by no means the result of inflammation. "Chronic metritis" is therefore a misnomer. It will be evident that the secondary degenerative changes in the uterine musculature will affect the contractile power of the organ. Hence, the normal contractions which take place during menstruation will be deficient, and one of the factors which close the venous channels, favour thrombosis, and check uterine bleeding is lacking. The hæmorrhage in these cases is, therefore, prolonged and profuse, and ergot is useless because the contractility of the uterus is at fault. The following clinical notes on a case which I saw at the General Hospital, Birmingham, are interesting in this connexion.

The patient, 1-para (stillborn), with a history of repeated abortions (three), complained of irregular and profuse uterine hæmorrhage of one year's duration. The catamenia had always been profuse, lasting eight to ten days. Evidence of congenital syphilis was present in the form of corneal opacities from interstitial keratitis, and the upper incisors were of the Hutchinson type. Thin parchment scars were noted near the left knee-joint. The pelvic organs exhibited no gross lesion. Ergot was exhibited with little effect, if any, but an improvement rapidly followed the administration of mercuric chloride and potassium iodide. The catamenia are now regular, and for the last three months there has been no intermenstrual loss.

A somewhat similar case was that of a patient who attended the gynæcological out-patient department at the same hospital on account of profuse menorrhagia. The periods had been so excessive for two years that a secondary anæmia was well marked. The patient volunteered the information that several years previously she had contracted syphilis, and had only received treatment for one year. Various ulcerations and skin lesions had occurred during the last few years. On the strength of the syphilitic history I ordered potassium iodide in large doses. The menorrhagia ceased at the end of two months, and for the last year the periods have been regular and normal in every way.

These two examples certainly seem to prove that syphilis is a factor in the production of some cases of profuse uterine bleeding, and show that when a definite history is obtainable antisyphilitic remedies may be of much service in combating the menorrhagia. A thorough investigation with results carefully checked by the Wassermann reaction would probably yield very valuable information in the pathology of uterine hæmorrhage.

Hæmorrhage due to increased arterial pressure.—I next turn for a few moments to the consideration of uterine hæmorrhage in relation to a general increase in arterial pressure—a subject of some little importance, because undoubtedly a proportion of the cases now under consideration belong to this category. It is, of course, well known that immediately before each menstrual period the blood pressure rises, and is followed by a corresponding fall at the end of the flow. It is not so generally appreciated, however, that a pathological increase in pressure is liable to be followed by severe uterine hæmorrhage, and that the uterus simply acts as a safety-valve to the condition. A very interesting note on this fact was published recently by Mr. J. Hope Potter.[2] Mr. Potter observes that at the menopause, when the monthly loss of blood ceases, there is a permanent increase in arterial tension, and he regards the skin flushings and occasional attacks of uterine hæmorrhage as desirable outlets. Bleeding due to increased arterial tension may therefore occur (1) at and about the menopause, or (2) in the course of certain constitutional diseases, notably chronic interstitial nephritis. A very

[2] Brit. Med. Jour., Dec. 2nd, 1911.

good example, possibly involving both groups, came under my notice a few weeks ago.

The patient, aged 43 years, was admitted to the General Hospital, Birmingham, complaining of severe metrorrhagia of five weeks' duration. Fifteen weeks previously she had had what she called a slight "stroke," which had left weakness in the left arm and leg. The periods had been becoming more profuse for some months, and had terminated in a severe flooding. Examination of the pelvic organs revealed a uterus and appendages of normal size, and no local cause could account for the hæmorrhage. A bacteriological examination of the uterine blood showed that the same was sterile. The calcium index of the blood was taken by my house surgeon, Dr. C. E. Salt, and was found to be 1·545. The presence of a cloud of albumin in the urine led to an investigation of the blood pressure. This was estimated at 245 mm. of mercury and gave the key to the whole situation. The profuse uterine hæmorrhage was evidently secondary to the increasing arterial tension, and it ceased at once when the pressure was reduced by the administration of nitro-glycerine and digitalis.

The importance of this group of cases is obvious. Many a woman may disregard the slighter symptoms of increasing arterial tension, but should it become manifest by uterine hæmorrhage the suspicion will be roused that she is suffering from some uterine lesion. Neither ergot nor curettage will check the bleeding; the only method is to lower the arterial tension by purgatives, nitro-glycerine, suitable diet, and perhaps venesection. The use of the sphygmomanometer is therefore to be advocated in every case of uterine bleeding where the cause is obscure.

Hæmorrhage due to portal obstruction.—I have little to say about this cause of uterine hæmorrhage, although I think that amongst the poorer classes of the community bleeding from the uterus secondary to venous congestion and due to hepatic cirrhosis is by no means uncommon. Hæmorrhage of this type is distinctly paroxysmal, and in the majority of cases is readily relieved by free purgation.

I have noted clinically that when an undoubtedly alcoholic woman bleeds profusely from the uterus she very rarely suffers from hæmorrhoids. The two conditions appear to occur in inverse order, and undoubtedly the uterine hæmorrhage is to a certain extent beneficial in depleting the portal circulation. In one of my earlier cases I did not recognise that the hæmorrhage was due to hepatic cirrhosis, and I performed a vaginal hysterectomy because the bleeding was so profuse and was unchecked by curetting. That woman has since developed hæmorrhoids, and bleeds profusely from the rectum.

It is somewhat difficult on all occasions to recognise clinically those cases of uterine bleeding due to this cause. I have seen it alike in the very obese and obviously alcoholic type with florid features, watery eyes, and a large, easily palpable liver, and also in the spare woman with pinched features, and a small, hard liver, barely felt below the ribs. The points I usually lay stress on are the peculiar, somewhat aromatic, odour exhaled by these patients, the paroxysmal type of the hæmorrhage, and the fact that it usually ceases after free purgation. Morning vomiting and occasional hæmatemesis, when present, are useful to confirm the diagnosis.

Uterine hæmorrhage in relation with general blood diseases and calcium metabolism.—The remaining causes of menorrhagia which I propose to deal with must be dismissed quite briefly. Now bleeding from the uterus may be but a manifestation of a general blood disease. In this connexion it must not be forgotten that conditions such as the leukæmias, scurvy, and purpura may be responsible for a local hæmorrhage, and possibly might give rise to the suspicion that a uterine lesion was present. About three weeks ago a small child, aged 7 years, was brought to me on account of daily uterine hæmorrhage of three months' duration. On questioning the mother it transpired that bleeding had also occurred from the nose and gums, and an examination of the trunk and limbs revealed crops of minute purpuric spots. The uterine symptom in this case was but a part of the hæmorrhagic diathesis.

Bleeding from the uterus as a local manifestation of blood changes naturally invites a discussion of the rôle which calcium plays in the economy of the female. It has been proved by Blair Bell that menstruation is dependent to a large degree upon calcium metabolism, and that the periodicity of the function is in direct harmony with the same. When through any cause the circulating calcium in the body is interfered with the phenomenon is reflected in the catamenia. Bell has shown that the uterus directly excretes calcium, and should the calcium content in the blood not rise in a corresponding manner the coagulability of the latter will be affected, and menorrhagia will result. This factor probably accounts for some of the severe hæmorrhages without physical signs occurring in young girls. A point which appears to be of considerable interest is the occurrence of urticaria in association with menorrhagia. On more than one occasion I have been told by patients who have come to me for menorrhagia that just previous to, or during, the periods they have severe attacks of "nettle-rash." This again is a manifestation of lowered calcium content in the blood, and when present is an indication that any coexistent menorrhagia will probably be cured by the administration of calcium salts.

Intimately associated with calcium metabolism is the function of the thyroid gland. Blair Bell has also drawn attention to the fact that swelling of this gland is frequently noted just before the onset of menstruation, and suggests that one of the functions of thyroid secretion is to stimulate calcium excretion. Now, as menstruation is so dependent upon the latter, it might be expected that pathological conditions of the thyroid would be reflected upon the menstrual function, and in some cases this is so. In myxœdema, for example, the catamenia may be absent, and this can be explained by the corresponding absence of the thyroid secretion with its stimulus for calcium excretion. With exopthalmic goitre, on the other hand, I have several times noted menorrhagia, and this may be explained by an excess of the calcium stimulant. The following case of menorrhagia associated with a moderate-sized parenchymatous goitre is more difficult of explanation.

The patient, aged 54 years, was admitted to the General Hospital, Birmingham, with profound secondary anæmia due to uterine hæmorrhage. The periods were regular until one year before admission, and the patient had never passed through the menopause. For the last 12 months the losses had been very excessive, and it was feared that she had malignant disease of her uterus. On examination the pelvic organs were found to be physically healthy, and only a few shreds were removed by the curette. An anæsthetic given for the purpose of curetting was rendered very difficult on account of a large parenchymatous goitre, and any very radical operation was contraindicated. Curettage failed to relieve the hæmorrhage, and with a view to reducing the size of the goitre, for a possible hysterectomy at a later date, small doses of thyroid gland were administered. The uterine hæmorrhage ceased as the gland became smaller, and the patient has now been discharged from the out-patient department as cured. Apparently the enlarged thyroid in some way stimulated uterine bleeding, possibly by causing an excess of calcium excretion. The dried gland administered as a therapeutic agent must have been deficient in this stimulant, and at the same time was able to produce a diminution in the size of the goitre, thus leading to cure of the menorrhagia. Be the explanation what it may, the clinical effect was certainly most interesting.

I will conclude with a few remarks on treatment carried out on the lines indicated in this paper.

The rational treatment of idiopathic uterine hæmorrhage.—In the first place, it will be evident that neither ergot nor curetting will effectually control the conditions that I have described. It can indeed be truly said with regard to uterine hæmorrhage that the keystone of the therapeutic arch lies in a correct diagnosis. Uterine bleeding must be considered as a symptom only, and no stone must be left unturned to ascertain its cause. With this in view it is not sufficient to limit the examination to the pelvic organs. The abdomen must be examined for evidence of hepatic enlargement, the blood pressure must be accurately measured upon a sphygmomanometer, and the condition of the vessel walls ascertained. Evidences of syphilis or other constitutional disease should be looked for, and if possible the calcium index estimated. The condition of the heart, lungs, and thyroid gland must be noted, and if circumstances permit, a bacteriological examination of the uterine blood should be conducted. If the uterus is sterile, and no other cause is found to account for the bleeding, then one may confidently recommend curetting as a therapeutic measure.

Individual treatment will, of course, depend upon the condition diagnosed. Thus where the bleeding is due to a high arterial blood pressure the tension must be reduced by purgation, nitro-glycerine, and dieting. Purgation will also have its place in depletion of the portal circulation where hæmorrhage is due to hepatic cirrhosis. If the calcium index is low menorrhagia will probably be benefited by the administration of this agent, preferably in the form of the lactate.

In the case of bacterial infections I have obtained good results by intra uterine applications such as peroxide of hydrogen, Churchill's iodine, or protargol. Treatment in these cases must be thorough and prolonged. The curette under such circumstances should, I consider, be absolutely tabooed.

Finally, where hæmorrhage is due to rupture of degenerated vessels in the uterine wall, hysterectomy appears to be the best and safest procedure. Howard Kelly devised a partial hysterectomy for similar cases, and it was introduced into this country by Victor Bonney under the name of "utriculoplasty."[3] So far the operation, in London at least, has received but little support, the general opinion being that if hysterectomy is required to relieve severe bleeding, it is preferable to perform the complete operation.

Such, then, is a somewhat brief consideration of a group of cases which I believe are of considerable importance to those of us who are called upon to treat the special diseases of women. If all our patients suffering from excessive uterine bleeding could receive the benefit of a detailed examination before resort is made to the curette, I feel sure that it would lower the 20 per cent. of failures previously referred to, and help to prevent the operation of curetting from falling into discredit.

In conclusion, I desire to express my most sincere thanks to my colleague, Dr. Thomas Wilson, for the very great help and advice that he has afforded me in the examination of the cases and material employed in the preparation of this paper.

Birmingham.

THE TREATMENT OF BILHARZIASIS BY SALVARSAN.

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WE were led to investigate the value of salvarsan in the treatment of bilharzial disease, first, by the desire to test a new drug whose possibilities were as yet undefined and, later, by seeing in various scientific and lay papers a definite assertion that it cured the disease. This claim, which was given a wide publicity by Professor Ehrlich, is apparently based on a paper by Dr. Nicolas Z. Joannides,[1] a physician practising in Cairo. Since it seems that this claim is taken seriously outside Egypt, it may be well to analyse the evidence on which it rests.

Dr. Joannides reports seven cases of marked bilharzial infection of some standing, which were injected with varying doses of salvarsan by the intramuscular method of Alt. All these patients ceased to pass ova in the urine in less than a week—four of them in less than two days. The permanency of the cure is less striking, for although one case had clear urine after two months, and another appeared free from the disease seven weeks later, very little evidence is forthcoming about the remainder. Two cases were examined "repeatedly" or "weekly" for a period not stated with negative results. Another at the end of a month still had urethral pain, but no examination of the urine was made, nor any reason given for omitting this. Another three weeks later was passing blood; no eggs were found, but no reason is assigned for the hæmaturia. The remaining case was discharged cured after two days, and never seen again. The author concludes that he must have remained well or he would have returned for further treatment, a rather large assumption when the inconveniences of an intramuscular injection of salvarsan are considered. Practically, therefore, the claim amounts to this—that an injection of salvarsan puts a complete stop to the passage of bilharzia eggs, and that this is equivalent to a cure of the disease.

Dr. Looss,[2] whose authority on this subject no one is likely to dispute, has already pointed out that this is not the case. A bilharzial bladder contains in its walls millions of eggs, some living, others calcified. It is the presence of these eggs acting as foreign bodies which produces papillomata, ulceration, and that dense fibrous thickening which in extreme cases reduces the bladder cavity to a small rigid septic space in the middle of a solid mass. The only possible cure of the disease is arrived at by the expulsion of all existing eggs, as well as the stoppage of the production of fresh ones. Even the death of all the worms will cause no improvement in the symptoms till the eggs have been expelled—a fairly lengthy process. For in a chronic case, such as those treated, the bladder wall must contain an enormous number of eggs. If these cease to be discharged they must either be dissolved or encapsuled.

The possibility of any drug causing a complete dissolution of all the eggs, living or calcified, without destroying the tissue in which they lie need not be seriously considered. If, however, the eggs are encapsuled the fibrous thickening, rigidity, and other structural changes in the bladder are thereby rendered permanent and the natural process of cure made impossible, so that the complete cessation of the passage of eggs observed in this remarkable series of cases must have inflicted a lasting injury on the patients.

The ideal treatment of this disease must fulfil three conditions: it must destroy the worms, it must cause, or allow of, a complete expulsion of all the eggs, and it must kill the eggs so that they cease to be a danger to others. Dr. Joannides has produced no evidence that salvarsan fulfils any one of these conditions; his chief point seems to be that it fails to fulfil the second.

The importance of any possible means of curing this disease is very great; it would mean the saving of millions of pounds to Egypt, and the alleviation of a vast amount of suffering. On the other hand, salvarsan—a most valuable drug in its proper sphere—has already been quite sufficiently misused. Its widespread application to the treatment of a common disease on which it exercises no effect would only discredit the profession and damage the persons and pockets of a large number of people. Accordingly, we considered ourselves justified in trying to settle this point by making a few careful and thorough observations and publishing the results. The patients selected have not suffered any ill-effects beyond the ordinary inconveniences of the injection.

CASE 1.—A boy, aged 12, had suffered for two years from severe bilharzial infection of both bladder and intestines. His leucocyte count was 14,450, of which 38·5 per cent. were eosinophiles. Dr. Bitter, who had received a supply of "606" from Professor Ehrlich, was kind enough to give him an injection of 0·15 grm. intramuscularly. The boy continued to pass living ova—that is to say, ova which hatched out into miracidia—up to the time of his discharge a fortnight later.

CASE 2.—A policeman, aged 30, complained of the symptoms of bilharzial infection for the last 12 years—namely, frequency of micturition, urethral pain, and continual hæmaturia. In the last year and a half these symptoms had become worse. There were no intestinal symptoms, and nothing was felt per rectum. Cystoscopy failed owing to the profuse bleeding. The urine contained a number of calcified ova and a few living ones. Eosinophiles on admission 5·3 per cent. On Dec. 21st, 1911, he received 0·6 grm. salvarsan intravenously. Serum taken two hours after injection had no more toxic effect on the miracidia than serum taken before. Three days later his eosinophiles were 12·6 per cent., and they varied irregularly till his discharge nine days later, when they stood exactly at the same figure as on admission. There was no improvement in his symptoms.

Blood examinations were made at frequent intervals after his discharge, but showed no notable variations from the original condition. When last seen, on March 30th—more than three months after injection—the eosinophiles were 7 per cent., the ova which he passed hatched out into living miracidia, and his condition, from his own account, was precisely the same as before injection. He had been on duty the whole time and presumably had no chance of reinfection.

CASE 3.—A hospital attendant, aged 21, was selected as being always available for examination and not exposed to reinfection. Eight years ago he developed a painless hæmaturia. Four years ago he left his village and resided continuously in Cairo. For a year he was a tram conductor, and since then has worked in hospital. Two years ago he began to have pain in the urethra. There was never any blood in the stools. His leucocyte count was 9558, and his eosinophiles 12·3 per cent. This was less than was to be expected, since the bilharziasis was severe. The red corpuscles were over six millions. On Jan. 22nd he received 0·6 grm. salvarsan intravenously, and was discharged from the ward two days later.

A month later the total number of leucocytes had risen to 12,467, of

[2] THE LANCET, May 13th, 1911, p. 1266.
[1] Deutsche Medizinische Wochenschrift, No. 34, August 24th, 1911.
[3] Ibid., No. 2, 1912.

which just over 10 per cent. were large mononuclear and 20 per cent. eosinophiles. Examination on March 30th, nearly ten weeks later, showed a similar condition of the blood. His symptoms have been exactly the same—there is always blood in the urine, and at times he has to pass urine every half hour. Ova were found on both occasions and hatched out freely.

Consideration of these cases leaves no doubt that they were absolutely unaffected by the administration of salvarsan.

The first case was not followed up; his liability to re-infection prevented his being a good test case. The chief point proved was that in his case salvarsan, given intramuscularly, exerted no effect on the life or discharge of the ova. Since it is this method which is stated by Dr. Joannides to have produced a complete absence of ova in all his cases in less than a week, it is useful for comparison.

The other two cases were injected intravenously. If any drug is to produce a rapid effect on parasites which live in the blood-vessels, clearly the most effective way is to introduce it directly into the circulation. Unluckily the death of the worms cannot be recognised by any immediate change in the symptoms, which depend, as has been explained above, on the presence of the eggs already laid in the tissues. The only possible indication of the death of the worms would be a marked fluctuation in the degree of eosinophilia, which would ultimately tend to disappear. This was accordingly investigated repeatedly with a negative result. The persistence of symptoms, and particularly the continued discharge of living eggs, leave no doubt that the effect on the eggs themselves was absolutely *nil*. Both cases were carefully watched over a sufficiently long period to establish this point.

We, therefore, conclude that salvarsan as a remedy for bilharziasis is absolutely valueless, and that it should not be used or recommended for this purpose.

CAN AS GOOD RESULTS BE OBTAINED BY THE TREATMENT OF PULMONARY TUBERCULOSIS IN THE LOW-LANDS AS AT HIGH ALTITUDES?[1]

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SINCE the year 1899, when Turban issued his famous book "Beiträge zur Kenntniss der Lungentuberkulose," it has appeared to many physicians as an established dogma that a mountain climate, and more especially a high altitude climate, is one of the most important conditions for the treatment of pulmonary tuberculosis, and that the results which were obtained at the high altitudes in reality were far better than those which could be obtained in the lowlands. Turban's statistics were so much more satisfactory than those published hitherto that this opinion seemed to be well founded. Experienced authors, however (such as Meissen, Schröder, and others), have maintained the opposite standpoint, but up to now no proof based on statistics has been offered to show that it is possible to obtain just as good results at a low level as at a high altitude. On the other hand, there are still authors (for instance, Williams in his Harveian oration, 1911[2]) who strongly maintain that treatment at high altitudes is far superior to all other climatic or hygienic forms of treatment.

After having worked for some years in Denmark at Vejlefjord Sanatorium, which is close to the sea and only 25 metres above it, it was clear to me that our results were hardly inferior to Turban's, and now, after a period of 12 years' work, I consider myself entitled to offer the proof thereof based on statistics.

I am well aware that it is extremely difficult to compare the results of two methods of treatment, or the results from two sanatoriums, and that it is very easy to go astray into a wilderness of statistical lies. It would not be correct to make a simple comparison between the figures obtained from different localities, especially with regard to the results gained at the time of the patient's discharge, when a more or less optimistic temperament on the part of the physician in charge quite involuntarily affects the figures.

To begin with, in classifying the material it is impossible to obtain complete uniformity. In every classification into stages there must always be boundary cases which two observers may judge somewhat differently, so that it is hardly to be expected that two physicians will classify a great number of patients quite in the same way. But experience has shown that Turban's original division into stages,[3] when his definition is followed exactly, answers practical requirements excellently, and gives figures which may very well be compared. This is especially the case when the Turban method of classification is supplemented by Sofus Bang's divisions of field,[4] as used at all Danish sanatoriums since the year 1907. By this method as homogeneous results as possible are obtained.

While, as mentioned, a general comparison of the results at the time of discharge cannot be made, there are still some results which can be expressed numerically, and which, when due criticism is exercised, may be used for comparison. These are the disappearance of tubercle bacilli from the sputum, and a normal temperature at the completion of the treatment in patients who exhibited tubercle bacilli, or were febrile at the beginning of treatment.

A third fact which can be expressed numerically is the increase in weight, but this depends largely upon the patient's state of nourishment on admission. Well-to-do patients who have been properly fed before their admission will, as a rule, show less increase in weight than less well-to-do patients. While an average increase of weight for each patient during the treatment at Turban's sanatorium was 4 kilogrammes, at Vejlefjord sanatorium it was 5–8 kilogrammes. This need only indicate that Turban's patients were richer than our patients.

The percentage of patients who during treatment were relieved of tubercle bacilli in their expectoration can be seen from the following table:—

	Turban's Sanatorium.	Vejlefjord Sanatorium.
Stage I.	74 per cent.	79 per cent.
Stage II.	41 ,,	65 ,,
Stage III.	11 ,,	17 ,,

It will be seen that the figures throughout are more favourable at Vejlefjord Sanatorium than at the high-altitude sanatorium.

The percentage of those patients who were admitted with fever but became afebrile during the treatment is as follows:—

	Turban's Sanatorium.	Vejlefjord Sanatorium.
Stage I.	85 per cent.	83 per cent.
Stage II.	80 ,,	96 ,,
Stage III.	44 ,,	69 ,,

The figures cannot accurately be compared as the temperature is taken in the mouth at Turban's Sanatorium and in the rectum at Vejlefjord Sanatorium. These figures also show that the results are in no way better at Davos than at Vejlefjord Sanatorium. This fact is still more emphasised in that the average duration of the treatment at Turban's Sanatorium was 222 days, while at Vejlefjord Sanatorium it was, up to 1908, 176 days.

When in practice an estimate is to be made of the results of a method of treatment, the question arises at once how the results will appear a number of years after its termination. The value of such an estimate is, however, limited, as the permanence of the results often are dependent upon circumstances which are quite without any connexion with the treatment. And with pulmonary tuberculosis, where so much depends upon the patient's ability subsequently to take such precautions as are necessary in order to maintain the result gained, it is evident that the financial position of the patients is of great importance. When, therefore, a comparison is made between the results from Turban's Sanatorium and from Vejlefjord Sanatorium, it must be remembered that Turban's charges are 50–100 per cent. higher than at Vejlefjord, the patients being considerably better off. For this reason it is to be expected that Turban's patients would keep in better health than those from Vejlefjord.

[1] A paper read before the International Congress on Tuberculosis at Rome, April, 1912.

[2] THE LANCET, Oct. 21st, 1911, p. 1117.

[3] The Turban-Gerhard classification into stages "internationally adopted," unfortunately, is quite useless in the treatment of material such as ours; we would scarcely have 5 per cent. in Stage I. and 5–10 per cent. in Stage II., and more than four-fifths of the patients in Stage III.

[4] Zeitschrift für Tuberculoze, vol. xii., p. 384.

At both sanatoriums investigations concerning the later fate of the patients have been made—by Turban in the year 1897 for patients discharged from 1889–96, or 1–7 years after their discharge; at Vejlefjord Sanatorium every year since 1903, so that statistics compiled in 1911 include those patients who have been discharged from April, 1900—December, 1908, or from 2–10¾ years after their discharge.

A simple comparison of figures is, as mentioned before, not permissible. Each separate stage comprises at both places most heterogeneous material, a most unequal number of cases, with or without tubercle bacilli in their sputum, and a great difference in the number of patients admitted with or without fever; and the figures are of course highly influenced thereby. It is therefore necessary to select a more exact limitation within the separate stages, and such a one presents itself quite naturally, partly in regard to the bacilli, and partly in regard to the temperature. I have first made a comparison between the cases with bacilli—i.e., such cases where tubercle bacilli have been found in the sputum at the time of admission or during the stay at the sanatorium, within the separate stages, and the results of the comparison are given in Table I.

TABLE I.—*Statistics from Turban's Sanatorium and Vejlefjord Sanatorium regarding the Later Fate of Patients Admitted with Tubercle Bacilli in their Sputum or in whom Tubercle Bacilli have been Found during their Stay at the Sanatoriums.*

—	Turban's Sanatorium (after 1–7 years).			Vejlefjord Sanatorium (after 2–10¾ years).		
	Stage I.	Stage II.	Stage III.	Stage I.	Stage II.	Stage III.
1. Able to do ordinary or light work	36	99	17	32	72	189
2. Unable to work on account of tuberculosis	2	25	8	0	2	40
3. Unable to work on account of other illnesses	1	0	1	0	1	5
4. Died from other illnesses ...	0	1	2	4	3	11
5. Died from tuberculosis ...	0	54	73	3	26	522
6. Unknown	0	5	3	0	1	8
Total...	39	184	104	39	105	775[5]

[5] The considerable number of patients in the third stage at Vejlefjord Sanatorium is easily explained, for it is the only large sanatorium in Denmark intended for well-to-do, or fairly well-to-do, patients, and the sanatorium is therefore always sought by a number of patients who are very ill. And all patients who apply are admitted if there is but some possibility of improvement.

If the percentage is calculated, and Nos. 3 and 4 are omitted from this calculation (those who are otherwise ill or have died from other illnesses than tuberculosis, and whose fate does not influence the judgment of the present facts), then the figures will be as shown in Table II.

TABLE II.—*Cases with Bacilli (omitting those who are ill or have died from other illnesses).*

—	Stage I.		Stage II.		Stage III.	
	Turban's Sanatorium (after 1–7 years).	Vejlefjord Sanatorium (after 2–10¾ years).	Turban's Sanatorium (after 1–7 years).	Vejlefjord Sanatorium (after 2–10¾ years).	Turban's Sanatorium (after 1–7 years).	Vejlefjord Sanatorium (after 2–10¾ years).
	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.
1. Able to work	94·7	91·4	54·0	71·3	16·8	24·7
2. Unable to work on account of tuberculosis	5·3	—	13·7	2·0	7·9	5·3
5. Died from tuberculosis ...	—	8·6	29·6	25·7	72·2	68
6. Unknown	—	—	2·7	1·0	3·0	1·2

Table II. shows that although a considerably longer period has passed from the time of discharge, still the results from Vejlefjord Sanatorium are in no way inferior to those from Turban's Sanatorium, and that they are even considerably better with regard to the more severe forms of the disease.

The other relatively homogeneous category within each separate stage is composed of those patients who have been admitted to the sanatorium with fever. The results for patients admitted with fever at the two sanatoriums are shown in Table III.

TABLE III. — *Statistics from Turban's Sanatorium and Vejlefjord Sanatorium regarding the Later Fate of Patients admitted with Fever.*

—	Turban's Sanatorium (after 1–7 years).			Vejlefjord Sanatorium (after 2–10¾ years).		
	Stage I.	Stage II.	Stage III.	Stage I.	Stage II.	Stage III.
1. Able to do ordinary or light work	18	40	10	20	37	91
2. Unable to work on account of tuberculosis	0	13	6	0	0	15
3. Unable to work on account of other illnesses	0	0	0	0	0	2
4. Died from other illnesses ...	0	0	1	2	1	6
5. ,, ,, tuberculosis ...	1	34	63	0	11	336
6. Unknown	1	3	2	0	0	2
Totals	20	90	82	22	49	452

Table IV. is a re-calculation of Table III. to percentage figures in the same way as Table II. in its relation to Table I.

TABLE IV.—*Febrile Cases (omitting those who are ill or have died from other illnesses).*

—	Stage I.		Stage II.		Stage III.	
	Turban's Sanatorium (after 1–7 years).	Vejlefjord Sanatorium (after 2–10¾ years).	Turban's Sanatorium (after 1–7 years).	Vejlefjord Sanatorium (after 2–10¾ years).	Turban's Sanatorium (after 1–7 years).	Vejlefjord Sanatorium (after 2–10¾ years).
	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.
1. Able to work	90	100	44·4	77·1	12·3	20·5
2. Unable to work on account of tuberculosis	—	—	14·4	—	7·4	3·9
5. Died from tuberculosis ...	5	—	37·8	22·9	77·7	75·6
6. Unknown	5	—	3·3	—	2·5	0·5

As will be seen, Table IV. tells the same story as the table for the cases with bacilli, and shows that the results obtained at Vejlefjord Sanatorium, situated by the sea coast and just above the level of the sea, are more favourable as far as the severely, and even the most severely, attacked patients are concerned than the results obtained at Turban's Sanatorium, which is situated 1573 metres above the sea. The table also shows that the results are about the same at the two sanatoriums as far as the slighter cases are concerned.

Even if the possibility is taken into consideration that pulmonary tuberculosis in the course of time seems to show a certain tendency to take a milder course than before—a possibility I am personally not inclined to deny—and that the ten years which have elapsed between the dates treated by the two sets of statistics might have a slight influence in favour of our statistics, still I consider myself entitled to hold as proved that by the treatment of pulmonary tuberculosis in the lowlands it is possible to obtain results which are just as favourable as the results obtained at high altitudes—results that for Stages II. and III. of the disease are even better.

CÆSAREAN SECTION FOR LABOUR OBSTRUCTED BY A SUPPURATING OVARIAN DERMOID CYST.

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THE patient, aged 30, II-para, was admitted to the Leeds General Infirmary on Feb. 26th, 1912, in the last month of her third pregnancy. She said that the first labour was terminated by craniotomy. In the second pregnancy labour was induced at the eighth month, when a living child was delivered by forceps. After the second confinement her medical attendant told her that there was a post-uterine tumour, and shortly before admission he examined again, said that the tumour was larger and threatening to obstruct labour, and sent her to the Leeds Infirmary. She was transferred to my care by my colleague, Mr. Walter Thompson.

I found all the signs of normal pregnancy; the head was below in the left occipito-anterior position. Fœtal heart about 155. The oblique conjugate measured 4 in.; estimated true conjugate, 3½ in. A rounded tumour could be felt in the pouch of Douglas, not fixed to the uterus and capable of being slightly pushed up. It felt elastic and seemed likely to offer a serious obstruction to labour. The other organs were normal.

On March 14th labour came on at 4.30 A.M. and abdominal section was performed at 7.15 A.M. It was found that an ovarian cyst occupied the pouch of Douglas. It had slight adhesions, but could be pulled up. It was then seen to be leaking and discharging very offensive pus. The cyst was removed. I had hoped to be able to perform a conservative operation, but was afraid to do so in presence of the infected state of the pelvis. After incising the uterus I removed a living female child of 7¾ lb. weight. I next amputated the uterus through the cervix, leaving the left ovary and treating the stump in the usual retro-peritoneal manner.

The patient did very well, except that at the end of a week it was found that there was an accumulation of fluid in the pouch of Douglas, and this was evacuated by posterior colpotomy, several ounces of greenish offensive watery fluid being drained away. Nine days later the sinus required to be opened up with the finger, but after this recovery proceeded smoothly, and she was discharged cured on April 13th.

The following report on the tumour is by Dr. M. J. Stewart, pathologist to the infirmary: "The cyst, which is about the size of an orange, is filled with foul-smelling purulent fluid. The cyst-wall is lined for the most part by soft necrotic material, but at one place there is a large teratomatous 'anlage' measuring 1½ in. by ¾ in., and raised about ½ in. above the level of the cyst wall. From this a large tuft of fair hair is growing, and there are two unerupted teeth in its interior. On microscopic examination the embryonic rudiment shows the usual epidermic structures of an ovarian dermoid, skin, hair, and sebaceous glands, with much fatty tissue and unstriped muscle. Deeper down lies a small mass of embryonic nervous tissue. There are no hypoblastic structures."

Remarks.—Had this case been delivered without abdominal section the cyst would have been crushed flat and its septic contents extravasated in the abdomen, and probably it would have been necessary to sacrifice the child. Had conservative Cæsarean section been performed it is most probable that the uterine incision would have suppurated. By the course adopted both mother and child have been saved. I am indebted to my resident obstetric officer, Dr. T. Evans, for his careful conduct of the after-treatment.

Leeds.

THE GRESHAM LECTURES, 1912.—Dr. F. M. Sandwith, Gresham professor of physics, will deliver four lectures on May 7th, 8th, 9th, and 10th, at the City of London School, Victoria Embankment, E.C. The lectures, which are free to the public, will begin each evening at 6 o'clock, will deal with the Use and Abuse of Alcohol, and will treat respectively of (1) alcoholic drinks; (2) pre-Victorian liquor laws and the temperance movement; (3) the awakening of the public conscience; and (4) the medical aspect.

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

OBSTETRICAL AND GYNÆCOLOGICAL SECTION.

Exhibition of Specimens.—Fibro-Adenomata of the Ovarian Fimbria and the Question of the Accessory Ovary.—Retroflexion of the Gravid Uterus.—Rupture of Umbilical Vessels during Labour.

A MEETING of this section was held on April 11th, Dr. AMAND J. M. ROUTH, the President, being in the chair.

The following specimens were shown:—

Dr. T. W. EDEN: Uterus and Appendages from a case of Primary Amenorrhœa.

Dr. R. DRUMMOND MAXWELL: Fibroid Polypus becoming Carcinomatous.

Mr. B. GLENDINING read a paper on Fibro-adenomata of the Ovarian Fimbria and the Question of the Accessory Ovary, in which he described four cases of this new growth, which, in the absence of a critical histological examination, might readily be mistaken for ovarian tissue. He then proceeded to classify the evidence in favour of the occurrence of accessory ovaries, and indicated that in one group the above described growths were probably erroneously included as accessory ovarian tissue.

Dr. J. D. BARRIS read a paper on Retroflexion of the Gravid Uterus complicated by Hæmaturia. The patient, a multipara, aged 35, had her last normal period at the end of September, 1911. On Jan. 8th, 1912, she had an attack of severe abdominal pain, and the next morning could only pass urine with difficulty. For the next seven days the patient continued to suffer from pain over the bladder, and had difficulty in passing urine. During the next fortnight she was only able to hold her urine for an hour, and the abdomen was noticed to increase rapidly in size. She was then seen in the out-patient department by Dr. W. S. A. Griffith, who found the abdomen enormously distended and occupied by a tumour which extended to within one inch of the costal margin. A catheter was passed and 7 pints of clear urine were withdrawn. The patient was admitted to the gynæcological ward, and 3½ hours later another 3½ pints of urine were withdrawn. The abdominal tumour entirely disappeared. On examination by Sir Francis Champneys the cervix was found high up in the vagina almost out of reach, and pointing forwards. The sacral hollow was occupied by the retroverted gravid uterus. The bladder could be felt extending up to one inch above the navel, and when the catheter was again passed 28 ounces of bloody urine were drawn off. The uterus was then replaced and a rubber ring inserted into the vagina. A rubber catheter was inserted for the next 12 hours, after which the urine was drawn off every four hours. There was no more hæmorrhage. Subsequently the patient made a good recovery, and was able to pass her urine without difficulty. There was never at any time any cystitis. In all the recorded cases of hæmaturia the complication had been caused by the accompanying cystitis. In Dr. Barris's case there was no evidence of this, for no micro-organisms were found either on staining film or after cultivation. The hæmaturia might have been caused by rupture of a blood-vessel in the wall of the bladder, or by a tear in the lining mucous membrane, due either to over-distension or to the sudden relief of tension. Grosse was of opinion that a tear in a large varicose vein of the bladder was a common cause of hæmaturia during pregnancy, the varicose condition being due to the pregnancy, in the same way as hæmorrhoids and varicose veins of the vulva. That this condition did occur had been demonstrated by Luys with the cystoscope, and was also observed at a later examination in the case recorded above.

Dr. H. WILLIAMSON read a short communication on Death of the Child due to Rupture of Umbilical Vessels during Labour. In most cases where a child had bled to death from rupture of an umbilical vessel during labour the insertion of the cord had been velamentous. The insertion of the cord was velamentous in about 0·7 per cent. of all human placentæ. In twin pregnancies this insertion was more common. V. Winkel found it as frequent as 5 per cent. in the Dresden Clinic. The essential anatomical feature of a velamentous placenta

was the termination of the cord at some distance from the placental edge, the vessels diverging from one another and running over the chorion læve for a greater or less distance. The vessels might take a wide sweep over the membrane, and might eventually reach the placenta at a point on the margin most distant from the cord. If these vasa aberrantia ran in the portion of the membranes which lay in front of the presenting part of the child they were termed "vasa prævia," and it was obvious that they might imperil the life of the child in two ways: (1) they might be compressed between the presenting part and the wall of the lower uterine segment, and thus cause asphyxia; and (2) they might be torn across when the membranes ruptured and thus cause hæmorrhage. A woman, aged 32, was admitted to the lying-in ward of St. Bartholomew's Hospital on Feb. 25th, 1912. She was found to have a generally contracted pelvis. Fœtal movements were felt, and the fœtal heart was audible. As the head was small and could easily be made to enter the brim labour was allowed to take its natural course. After the cervix was fully dilated the patient began to lose a little blood with each pain, and the membranes were ruptured. As the bleeding continued the child was delivered without difficulty with forceps. It was pale, bloodless, and the heart was not beating. Twenty minutes later the placenta was expelled. On examination it was seen that the placenta was of the velamentous type. There was a rupture of an umbilical artery two inches from the cord, and the branch of the umbilical vein corresponding to the ruptured artery was thrombosed through the greater part of its length. It is probable that this vein was compressed between the presenting part and the uterine wall at a spot near its entrance into the main umbilical vein, and as a result became distended with blood, which then coagulated. When the second stage of labour commenced the membranes did not rupture at once, and as the increasing retraction of the uterus drove the bag of waters on towards the vagina the chorion gave way near the upper pole of the ovum, and at the same time the artery was torn across. The condition could be diagnosed during labour if pulsating vessels were felt running across the presenting pole of the bag of membranes. After bleeding had commenced the cases were usually mistaken for placenta prævia or accidental hæmorrhage. In one or two cases suspicion had been aroused because in spite of severe bleeding the mother showed no signs or symptoms of hæmorrhage. The presence of nucleated red corpuscles in the blood would confirm the diagnosis. Spiegelberg recommended that when the diagnosis was made early the membranes should be preserved intact till the cervix was fully dilated, and the child then rapidly extracted. Dr. Williamson was of opinion that when diagnosed early in labour the best chance of saving the life of the child lay in Cæsarean or vaginal section, but when the vessel had once ruptured the life of the child was so precarious that such operations would not be justifiable.

MEDICAL SOCIETY OF LONDON.

The Vital Phenomena under Anæsthesia.—Post-anæsthetic Poisoning.

A MEETING of this society was held on April 22nd, Dr. J. MITCHELL BRUCE, the President, being in the chair.

Dr. DUDLEY W. BUXTON read a paper on the Vital Phenomena, Nervous, Circulatory, Respiratory, and Metabolic, occurring under Anæsthesia, and their Relation to the Safety of the Patient.

Mr. EDRED M. CORNER read a paper entitled "Some Remarks on Post-anæsthetic Poisoning." He stated that amongst the many objects for the accomplishment of which the Hospital for Sick Children, Great Ormond-street, was founded was the furtherance of knowledge concerning the diseases of children. Post-anæsthetic poisoning, sometimes called delayed chloroform poisoning, was almost entirely an affection of children. The medical committee invited the formation of a small subcommittee to inquire and report on this condition. Fatal examples of post-anæsthetic poisoning were infrequent, so that it had not been their fortune to have been able as yet to garner details about such cases, without full knowledge of which any report on the subject must be incomplete. However, many inquiries had been conducted, the results of which it remained for extended knowledge to deny or confirm, which were of practical interest. To begin with, there was nothing with regard to the presence of any impurity in the anæsthetic to which post-anæsthetic poisoning could be attributed. Neither could the preparation of the child or the method of administration of the anæsthetic be blamed. Similarly, so far as could be ascertained, there was no constant condition of the child which predisposed it to the incidence of post-anæsthetic poisoning. The nature of the operations performed in such cases varied from the manipulations for the reduction of a congenital dislocation of the hip or the operation for the removal of tonsils and adenoids to a long and tedious operation for the removal of tuberculous glands of the neck. So that it might be stated that the nature and duration of the operation had no constant effect in the production of post-anæsthetic poisoning. Although none of the above factors showed any obvious and constant effect in producing the poisoning, it was probable and possible that many of them did have a non-obvious contributory power in its production. Having thus enunciated many negative propositions, he proceeded to state some positive results. There was one salient fact. When medical registrar to the Children's Hospital, Great Ormond-street, Dr. Frew had shown how very frequently acetone occurred in the urine. The mere admission of a child to the hospital produced it in a large percentage of such patients. The inquiries conducted confirmed this and showed further that an administration of an anæsthetic raised the percentage of such developments of acetonuria from about 35 to 72. Many inquiries had been conducted as to the occurrence and prevention of this acetonuria. But they might all be beside the mark, as it had never been shown what relation this common condition of acetonuria had to the very uncommon condition of fatal post-anæsthetic poisoning. Many had assumed that there was a close relationship, but theirs had been a pure assumption. Extreme fatty change in the liver was a constant feature of post-anæsthetic poisoning. But acetonuria could apparently occur independently of this. Until this question was answered no great advance could be made in scientific knowledge of the condition of post-anæsthetic poisoning. The nature of the anæsthetic employed did have some influence on the frequency of the occurrence of acetonuria. It was more frequent after the administration of chloroform than after any other anæsthetic. But it occurred after the latter, and even after the intravenous administration of hedonal. Hence it was possible that the acetonuria was not a capital sign of post anæsthetic poisoning, but merely a symptom of a metabolic derangement which was one of many contributory causes of post-anæsthetic poisoning. The only factor common to all these cases of poisoning was the administration of a poison to produce anæsthesia. So that it would seem that so long as such methods were used to induce anæsthesia so long would there be a risk of post-anæsthetic poisoning, and it was only in their power to minimise its dangers. Clinical experience suggested a number of points which apparently assisted them to attain this end. The routine of the patient's life should be disturbed as little as possible, starvation and purgation being particularly avoided. The preparation for anæsthesia should be very gently and insensibly conducted so as to extend over several days or a fortnight. Glucose should be given over this period to fill the carbohydrate "store-houses" of the liver. A hypodermic injection of morphia and atropine should be given about three-quarters of an hour before the administration of the anæsthetic. The absorption from septic places, such as tonsils, should be minimised as much as possible, because it would seem that foci of sepsis existing before operation did have a great contributory effect in inducing the occurrence of post-anæsthetic poisoning, probably by lowering the patient's powers of resistance to the action of the anæsthetic drug. Chloroform was without doubt by far the most dangerous drug in producing post-anæsthetic poisoning. Therefore the less it was used the better. But it must be remembered that post-anæsthetic poisoning had occurred after ether, chloroform and ether, and even nitrous oxide gas. As little of the poisonous drug as possible should be used to attain the desired end—efficient anæsthesia. After anæsthesia every opportunity should be given of excreting the poisonous drug used to induce anæsthesia—stomach washing, purgative, diuretic, warmth, &c. Thus a certain degree of post-anæsthetic vomiting was beneficial. Glucose should be given, but the post-operative administration was less important than the pre-operative. That was a brief

summary of how to minimise the frequency of non-fatal cases of post-anæsthetic poisoning. Post-anæsthetic poisoning was a veritable scourge in a children's hospital, being especially in its non-fatal manifestations very much more frequent than was commonly supposed. At the present moment the safest method of inducing anæsthesia in children was by the administration of "open ether" to a child who had been carefully prepared with the addition of glucose to the diet for a few days previously, and who was given an injection of morphia and atropine three-quarters of an hour before the anæsthesia.

LIVERPOOL MEDICAL INSTITUTION.

Exhibition of Specimens.—Bacteria Carried by Flies.

A MEETING of this society was held on April 18th, Dr. J. LLOYD ROBERTS, Vice-President, being in the chair.

Mr. R. E. HARCOURT showed sections and lantern slides of a Leucoma Adherens between the Cornea and the Capsule of the Lens, also sections of a Staphyloma of the Cornea, and a Horn from the Lower Lid which he thought to be of the nature of a wart plus concretion.

Dr. T. R. BRADSHAW and Dr. E. E. GLYNN exhibited a Heart with a Sacculated Aneurysm in the undefended space, which bulged into the right auricle and ventricle. The valves were normal. There was no evidence of syphilis. Death was due to sclerosis of the orifices of the coronary arteries.

Dr. H. F. WOOLFENDEN and Dr. GLYNN showed an Omentum with Extensive Fat Necrosis and the Pancreas from a case of Hæmorrhagic Pancreatitis. 240 gall-stones were removed from the patient. Two were found post mortem in the common bile duct, but none in the orifice of Vater's ampulla. The pancreatic duct was normal.

Dr. GLYNN showed a Heart with Acute Vegetative Aortitis, with the orifice of one coronary artery blocked; also a Heart weighing 41 oz. with Atheroma of the Aorta and Degeneration of the Aortic Valves.

Mr. F. A. G JEANS showed a Carcinoma of the Male Breast. The patient had been in the habit of pressing the top of his brace-bit against the breast.

Mr. G. P. NEWBOLT showed two cases of Hydronephrosis; also two large Gall-stones which had caused acute intestinal obstruction; and with Dr. S. W. MCLELLAN a Slough of the entire Mucous Membrane of the Vermiform Appendix.

Dr. E. W. LEWIS showed a Primary Malignant Melanoma of the Rectum.

Dr. MILDRED POWELL showed Sugar-free Milk prepared by precipitating the casein from creamed milk by acetic acid. The clot was washed until sugar-free, neutralised with alkali; to this was added clotted cream and water. The resultant milk was slightly richer in fat than ordinary milk, and being sugar-free was a valuable addition to the dietary of a diabetic.

With Dr. O. T. WILLIAMS, Dr. POWELL showed specimens illustrating the effect of Fatty Acids on Tubercle Bacillus. Fats, soaps, and lecithids were prepared from the blood of a case of diabetes and added to glycerine-acid-agar. It was found that the tubercle bacillus grew well in all the fat bodies present in diabetes except the free fatty acids. The growth on normal blood was not so profuse as on diabetic fat. Specimens were shown of the growth of tubercle bacilli on other fats. It was found there was free growth on all saturated fats, and on unsaturated glycerides such as cod-liver oil, but less on free fatty acids. Controls with other acids showed that acidity affected growth, but a 2 per cent. stearic acid gave a freer growth than a 1 per cent. oleic acid which had less acidity. There was no growth on soaps of the unsaturated fatty acids even when the acidity was neutralised.

Mr. F. T. PAUL showed a specimen of Perforated Peptic Ulcer, removed by operation from a man on whom a gastro-enterostomy had been done in 1908

Dr. J. O. WAKELIN BARRATT read a note, with lantern demonstration, on Chondrisomes in Normal Cells.

Dr. GLYNN and Dr. G LISSANT COX, assisted by Mr. F. C. LEWIS, communicated a paper on the Bacteria Carried by Flies in the City of Liverpool. They noted the objectionable habit the flies had of contaminating human food with their saliva, vomit, and excrement; also that typhoid, paratyphoid, dysentery, cholera, and other bacilli had been found in "wild" flies. During last summer they had made a series of observations on the numbers and varieties of bacteria carried by the Musca domestica caught in the congested and insanitary portion of the city, where infantile diarrhœa was common, and those carried by flies caught in less congested or suburban areas where infantile diarrhœa was less prevalent. It was found that the numbers of bacteria growing at 18° C. that could be washed off the bodies of flies varied from 2500 to over 1,000,000,000, whereas the number carried inside and outside the fly varied from about 100,000 to 1,000,000 000,000. Intestinal bacteria—i.e., colon group, &c.—growing at 37° C., also varied from about 100,000 to 1,000,000,000,000. Generally speaking, flies caught in the congested and insanitary parts of the city, especially in the neighbourhood of the slaughter-houses and refuse destructors, carried and contained far more bacteria, particularly of the intestinal group, than those caught in the more sanitary portion, as model dwellings and suburban areas. These results demonstrated the necessity of efficient scavenging, especially in the congested parts of the city. The importance of preventing the contamination of food by flies was emphasised. Strains of bacilli resembling paratyphoid B, Morgan's bacilli, and bacillus pyocyaneus were isolated; these were more common in congested areas.—In the discussion that followed Dr. C O. STALLYBRASS said that recent investigations showed that the autumnal epidemic of typhoid fever was still marked in the central parts of the city, especially where there were collections of horse manure, but it had practically disappeared from the outer parts of the city.—Dr. R STENHOUSE WILLIAMS said that though organisms had been found in flies similar to those causing disease, such as infantile diarrhœa, it had not yet been proved that flies were the cause of disease, or at least not the only cause.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

SECTION OF PATHOLOGY.

Acute Yellow Atrophy.—Human Actinomycosis.

A MEETING of this section was held on March 22nd, Professor A. H. WHITE, the President, being in the chair.

Dr. A. E. WYNNE, speaking of a case of Acute Yellow Atrophy from the clinical aspect, said that the patient, who was married and had one child, had consulted him for chancre on the penis, which was considered to be syphilitic. The patient was put on hydrargyrum cum creta, but the chancre went on enlarging for some time. With regard to the acute yellow atrophy, he saw the patient on March 1st, when he was distinctly jaundiced, although a week before he had been apparently all right. He had some vomiting and loss of appetite, and it was considered to be a case of ordinary catarrhal jaundice, and was treated accordingly. When he was seen on March 4th and 5th it was noticed that he was not perfectly clear in his memory of recent events, but was otherwise very rational. On March 8th he was delirious, and on the following morning maniacal, and had been very violent during the night. The diagnosis was accordingly revised in favour of acute yellow atrophy, which was concurred in by Dr. A. R Parsons. A catheter specimen of the urine was taken, and the patient was removed to hospital He continued violent and had to be put in a strait waistcoat. He died the following morning, within ten days from the commencement of the disease.—Dr PARSONS said that when he saw the patient he was delirious and practically unconscious. He had his reflexes; temperature 99 5° F, and pupils medium. He was very restless, and it was found impossible to pass a catheter. He had passed no urine since the previous day. When a specimen of urine was obtained by catheter it contained a very minute trace of albumin and some bile. The patient was not markedly jaundiced. There was no leucin or tyrosin in the urine. There was a marked diminution of urea, only one-fourth of the normal amount being present; but there was an increase in the amount of ammonium salts, about three or four times the normal amount of ammonium being present. The liver dulness had disappeared. At the necropsy the liver could not at first be discovered, but on passing the hand far back in the anterior abdominal wall a liver very much diminished in size with markedly diminished left lobe, was found. Some microscopic

sections were made to examine for leucin and tyrosin, but with a negative result. The spleen and pancreas appeared normal. On inquiry at the Registrar-General's Office it was found that no case of death from acute yellow atrophy had been certified for the past ten years; and as it was known that two cases had occurred it would be of interest to ascertain under what heading they were certified.—Professor A. C. O'SULLIVAN had examined the liver submitted to him. It measured 9 in. in length, right lobe 5¾ in., left 3¼ in., 4½ in. in width, 2¼ in. in depth; weight 22 oz. The consistence was greatly diminished, fluctuation could be felt on the surface, the capsule was wrinkled; on section the cut surface was smooth, shiny, and moist. No fluid came away on streaking the surface with a knife. The colour was dark brown on the surface; on section the right half of the right lobe was dark reddish, the rest of the right lobe and the left were greenish yellow; the markings of the lobules were difficult to see. In the yellow part, with the lens, a marking with depressed dark lines could be seen. *Microscopic.*—The *yellow portion* of the liver showed complete fatty degeneration and necrosis of the liver cells with intermediate portion of the lobule extending nearly out to Glisson's capsule and nearly into the central vein. Nile blue staining showed a great quantity of neutral and mixed fat. The outlines of the cells could be distinguished, but they were separate and scattered, and had lost all trace of columnar arrangement. There was much light brown, finely granular pigment, which lay often in the circumference of a clear vacuole. There was slight cell infiltration of Glisson's capsule, and round the central vein. The *red portion* showed light and dark-stained areas, the latter round Glisson's capsule and the central veins, the former corresponding to the intermediate part of the lobule. In the *light areas* the liver cells were broken up, and were very various in size, some being multinucleated. The capillaries were distended with blood, and there were numerous hæmorrhages. Many liver cells contained red cells in their interior. There was much brown pigment in tiny needle crystals. In the *darker areas* there was also much pigment, coarsely granular, in clumps, whose outlines suggested that the pigment lay in the interior of cells. In places, especially around the central veins, there were areas of cell infiltration and numerous "new-formed bile-ducts." Neutral fat occurred in considerable quantities in the dark areas, but was generally absent from the light areas.—Dr. W. D. O'KELLY said that cases that were formerly regarded as yellow atrophy now fell under one of two heads—viz, those in which general fatty degeneration of the liver was demonstrable and those in which it was not. The term ought to be reserved for the latter.—The PRESIDENT thought it possible that many of these cases were not diagnosed, and many of the irregular forms of cirrhosis might be due to infections of this kind. He remembered a case of extremely acute yellow atrophy in which it was quite impossible to find anything indicating liver cells, although the patient died in four days.

In the absence of Professor E. J. MCWEENEY, Dr. O'KELLY introduced specimens of Human Actinomycosis, showing relation of fungus to implanted tissue (with lantern slides); also a microscopic section of a piece of Vegetable Fibre implanted in the Tongue, with the fungus adherent to it.

Dr. O'KELLY, giving notes on recent cases of Actinomycosis, said that since Bollinger in 1877 first described the ray fungus which he isolated from cattle actinomycosis had been very frequently recognised in animals, and to some extent in man, but records of cases were uncommon. Either, therefore, this disease was not regarded as sufficiently important to merit publication, or, more likely, the condition was frequently incorrectly diagnosed. The disease was readily amenable to treatment with KI, which could not be said of tuberculosis, for which it was frequently mistaken. The disease was believed to be conveyed by chewing grass on which the ray-fungus was growing; in support of which in a list of 53 cases the disease occurred in the appendix region 14 times, and 27 times about the face and neck. He cited Soltmann's classical case, where a barley-awn was found in empyema pus along with the ray-fungus. The biology of the streptotriches had been dealt with recently by Foulerton in the Milroy lectures published in THE LANCET of 1910.[1] The lectures were complete and easily accessible. Recently it appeared that the leprosy bacillus, which so long resisted cultivation outside the body, and which was now suspected to be transmitted by a bug, was really a streptothrix with both acid-fast and non-acid-fast stages. The cases, of which he proceeded to give brief details, came under his notice in the Mater Hospital in 1911. Case 1: A man of cancerous age complained of trouble in the tongue, and as a small swelling could be felt an incision was made and the affected tissue removed. On incising the tissue with a razor at a place where the epithelium appeared to be thickened it was seen that the epithelium was merely raised over a portion of the muscle, which showed an unusual appearance. Frozen sections were made, and a nodule of actinomyces revealed itself in the midst of a granulomatous change in the muscle. Many other sections were examined, but only one other was found to show the fungus. Case 2: Female, from whom the appendix was removed. This was examined, and showed evidence of chronic appendicitis, but no special characteristics could be made out. The patient did well except for a small sinus which formed and refused to heal. A culture was made from it, and an autogenous staphylococcus vaccine prepared. The vaccine improved matters considerably, but the sinus persisted. It was then scraped, and in the films and sections prepared from the scrapings the ray-fungus was readily detected. The section was shown stained by the Gram-Wright method. In neither case was there anything to lead one to suspect a streptothrix infection. Case 3: A middle-aged farmer was admitted to hospital with a diffuse brown swelling in front of the neck, most marked over the supra-sternal notch. The diagnosis was of probable tuberculosis. The diseased area was incised, and drains were inserted. After some time the surgeon suggested the likelihood of actinomycosis. On examination of the pus "sulphur-grains" yielding the typical branching filaments on staining were found. Cultures were not made because the material from the first two cases was received in formalin. In the third case they were started, but were not a success. Case 4: In 1911 Dr. O'Kelly came across a case of streptothrix growth in the inferior canaliculus, 1 cm. in diameter, of which cultures and films were shown. The organism was Gram-positive, but not acid-fast. It required partial anaerobiosis, growing best about an inch from the surface of the agar, and the colonies resembled a sponge, whilst some were rather discoid in the early stages. He had not been able to find any name associated with this streptothrix.

Dr. W. G. HARVEY showed Cultures and Slides of Actinomyces. Various media were used, and some were done aerobically and others anaerobically. A specimen growing in glycerine-agar was also shown. Books on the subject said that the culture commenced to show after a week, but his experience proved that it was nearly a month before it appeared. He could find no club-shaped bodies in the original pus, but there were a good number of club-shaped ends to the filaments.

Mr. T. T. O'FARRELL also showed Cultures and Slides of Actinomyces from a case diagnosed as sarcoma. Either a brother or sister of the patient had died from sarcoma. He suggested hardening pus in formalin as a good preparation for cutting sections. He thought that the difficulty in culturing was due to the secondary infection.

Professor METTAM spoke of his experience of the condition in the lower animals. A considerable number of different varieties of actinomyces had been described, but the modern idea was that there was only one, that common to man and bovines. They grew in a most remarkable manner. Bowman found that the organism grew like that of contagious abortion, and got his colonies about ⅛ inch below the surface of the media. His own experience was that they grew like the streptothrix, but that owing to resistance he got development of clubs. He said it was an undoubted fact that a considerable number of investigators called colonies of actinomyces which were not actinomyces at all. He remembered a liver being sent to him, said to be tuberculous, from which he got a grand illustration of streptothrix. One of the methods of differentiation between the various forms of streptothrix was by animal experiment, as it was stated that it was almost impossible to reproduce actinomycosis experimentally. With regard to the staining of actinomyces in the tissues, cases had been recorded where the colonies would not stain by any method. So far as he could ascertain, most of the lesions were met with in some

[1] THE LANCET, vol. i., 1910, pp. 561, 626, 769.

part of the alimentary tract, where the condition occurred in man, whereas in the bovine specimens they were mostly confined to the head. The infection was commonly believed to be parasitic. In skin cases he thought there could be little doubt that the infection was direct. There were also cases clinically affected which were called actino-bacillosis.—Dr. HARVEY, Dr. ADRIAN STOKES, and the PRESIDENT continued the discussion, and Dr. O'KELLY replied.

UNITED SERVICES MEDICAL SOCIETY.—A meeting of this society was held on April 10th at the Royal Army Medical College, Major C. E. Pollock, R.A.M.C., being in the chair.—Major H. E. M. Douglas, V.C., R.A.M.C., read a paper on the Special Weaknesses, from a Medical Aspect, of Volunteer Troops. He instanced in the first place enteric fever, and quoted statistics of various wars to show the enormous importance of this disease in war. The main stand-by for prophylaxis was inoculation, and arrangements would be made to carry this out on mobilisation. The disturbance which resulted was so transient that this was feasible with regard to immunisation against enteric fever. On the other hand, small-pox, which was another disease greatly to be feared in the field, required an immunising process which would unfit the majority of men for the serious work of an army in the field for a fortnight, and on this account it was necessary to make every effort to secure revaccination of volunteer troops during peace time. That this was necessary was shown by the experience of the American Civil War, and more especially by the ravages which small-pox made in the badly protected French army in the Franco-German war, where the deaths from small-pox were said to have reached 23,400 in the French army, as against 278 among the carefully protected German troops. Sore feet were another great source of weakness in an army recently withdrawn from civil life, and for this Major Douglas advised that men should be encouraged to habituate themselves to the use of marching boots, and should be instructed in the care of their feet and the management of their boots. Heart strain also was likely to be extremely prevalent among troops suddenly put to the heavy physical labour of a soldier in the field without the regular and systematic physical training to which a soldier in the regular army was subjected; as a partial remedy for this he recommended that as much as possible should be done to encourage the culture of physical fitness among men of the Territorial Force, by the provision of gymnasia, &c. An example of the effects of overstrain in physically untrained troops was given in the experiences of one of the volunteer concentration camps in the American Civil War, where out of 4901 men discharged for physical unfitness 1123 suffered from some form of organic disease and 1200 from functional disease of the heart. The incidence of camp diarrhœa also was much influenced by the physical fitness or otherwise of the troops, as well as by the degree to which they were accustomed to accommodate themselves to the exigencies of camp life.—Major W. S. Sharpe, R.A.M.C.(T.F.), Major W. S. Harrison, R.A.M.C., Major S. Lyle Cummins, R.A.M.C., and Major G. A. Moore, R.A.M.C., took part in the discussion.

MEDICO-CHIRURGICAL SOCIETY OF GLASGOW.—A meeting of this society was held on April 12th, Dr. John Brownlee, Vice-President, being in the chair.—Dr. R. Speirs Fullarton showed a boy, aged 9½ years, who was demonstrated to the society on Jan. 19th with a Large Tumour of the Right Kidney, and had since been operated on in the Western Infirmary by Dr. James H. Nicoll. The boy had made an excellent recovery and had gained notably in weight. The excised kidney and microscopic sections of the tumour prepared by Dr. J. Shaw Dunn were demonstrated, the latter's report being that the tumour was an embryonic adeno-sarcoma peculiar in being almost purely adenomatous in structure.—Dr. J. Mill Renton showed a girl, aged 8 years, who had sustained in August, 1911, a Simple Fracture of Both Bones of the Forearm, and had since then, apparently in consequence of over-firm application of splints, suffered from symptoms of Volkmann's ischæmic paralysis—lividity and coldness of the hand, diminished sensibility to touch, marked flexion of the fingers, and wasting of the muscles below the level of the fracture. As the hand was quite useless when seen by Dr. Renton three months later, the treatment adopted was that of indirect lengthening of the tendons by shortening of both bones of the forearm. A length of 1¼ in. was removed subperiosteally and the bones were re-united by silver wire. This procedure, followed by the use of splints as advised by Mr. R. Jones, had given the child a very useful hand.—Dr. David Watson, in a paper on the Diagnosis of Chronic Gonococcus Infections, referred to some features of chronic gonococcal inflammation as revealed by the history, symptoms and physical signs, but said that while acute gonorrhœa could be diagnosed from clinical symptoms, in chronic processes bacteriological investigation was essential. After detailing the method of bacteriological examination and its results, he said that the complement-deviation test was of proved value as an aid to diagnosis, though its use was subject to certain limitations. The same was probably true of the skin reaction to gonococcus vaccine. This was at present being carried out experimentally in the Glasgow Lock Hospital by the intradermic injection of from 10 to 20 millions of dead gonococci of mixed strain. The result of the injection was a white urticaria-like bleb, followed, in cases of gonorrhœal infection, by the appearance in a few hours of a surrounding area of intense redness slightly exceeding the bleb in size. This specific reaction reached the maximum in three days, but the redness remained marked till the sixth or seventh day and slowly faded during the following week or ten days. The effect of the injection in a normal individual was at the most a slight redness which reached its maximum within 24 to 36 hours and faded to a barely distinguishable paleness in four to five days. In post-gonorrhœal cases a modified reaction between the normal and the specific was obtained.—Dr. W. S. Syme made a brief communication on "An Examination of 1050 Skulls: Some Points of Interest in connexion with the Surgery of the Ear and Nose."

LONDON DERMATOLOGICAL SOCIETY.—A meeting of this society was held on April 16th, when Dr. Morgan Dockrell presided. The following cases were shown and discussed:—The President: Two cases of Malignant Syphilis. Dr. J. L Bunch: A case of Ichthyosis Hystrix. Dr. W. Griffith: Two cases of Psoriasis, one complicated by X Ray Dermatitis. Dr. W. Knowsley Sibley: A case of Generalised Vaccinia, and one of Leucoderma treated by induced local hyperæmia. A series of slides to demonstrate the histology of Dermatitis Herpetiformis and Psoriasis were also shown.—Dr. Knowsley Sibley read a paper on Ionisation in the Treatment of Diseases of the Skin, and commenced by stating that drugs as ordinarily applied to the skin in the form of ointments, lotions, liniments, or powders were not absorbed, and only acted locally as protectives, emollients, stimulants, germicides, or caustic agents. The skin was purely an excretory organ and had not any power of absorption. The histology was next considered, which showed the epidermis to consist of squamous epithelial cells through which the openings of the hair follicles with their sebaceous gland ducts and the ducts from the sweat glands communicated with the exterior. All of these ducts were likewise lined with squamous epithelium. He did not consider it physically possible to rub such a body as the average ointment into the ducts or follicles. The idea of applying opium, belladonna, or cocaine to the normal skin as sedatives was a false one, and equally inefficacious was the application of ointments for the treatment of diseases of the hair follicles, such as ringworm or sycosis. By the process of ionisation it was, however, possible to introduce drugs soluble in water through the skin and into the subcutaneous tissues, and especially into the ducts and hair follicles. Dr. Sibley then gave a general description of the method, and some of his own observations as to the technique. He had found the system most satisfactory for the treatment of alopecia, chloasma (pigmentation), lupus, both erythematosus and vulgaris, ringworm, scars, sycosis, &c.

BRADFORD MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on April 16th, Dr. S. Lodge being in the chair.—The following specimens and cases were shown:—Dr. C. F. M. Althorp: (1) A patient after operation for Spina Bifida; (2) Gall-stones from a case of acute cholecystitis; (3) Stone removed from Kidney; and (4) Cartilage found loose in Knee-joint.—Dr. F. W. Eurich: (1) A case of General Paralysis of the Insane in a girl aged 19; and (2) specimens from a case of Lymphadenoma.—Mr. P. McEwan: A case after operation for Perforated Duodenal Ulcer.—Mr. McEwan read notes of a case of Ante-partum Hæmorrhage treated by Cæsarean Section. The patient was taken into hospital with slight hæmorrhage, and whilst

under observation evidently had a large intra-uterine hæmorrhage, and the abdomen was immediately opened. The patient was transfused at the commencement of the operation. There was practically no hæmorrhage during the operation, and the patient made an uninterrupted recovery.—Mr. J. Phillips read a paper, drawing attention to a Few Practical Points in Some Surgical Cases. 1. In inguinal hernia he recommended the "outer" incision, leaving intact the fascial bands crossing the inguinal canal. 2. In the operation for femoral hernia he advised the "inguinal" incision, as this enabled the operator to tie the neck of the sac at the top just under Poupart's ligament. 3. In cases of chronic constipation, where, as shown by a bismuth meal, the cause lay in the rectum, which did not respond to the stimulus of the fæces, excellent results were obtained by enemas of pure glycerine, beginning with 2 drachms, and gradually replacing the glycerine by water till finally pure water only was given. 4. In obstinate incontinence of urine in girls from 16 to 19 he advised an operation as follows: Dissect up the anterior wall of the vagina and then with a curved needle pass a silkworm gut suture round the urethra close to the neck of the bladder. Pass a fine catheter into the bladder and tie the suture round it. Put two or three other sutures in lower down. 5. After operation of circumcision Mr. Phillips recommended leaving the dressing on for a week. He said he always found the parts perfectly healed, and avoided in this way the painful daily dressing.

SHEFFIELD MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on April 11th, Dr. H. Ernest Knight, the President, being the chair.—Mr. Graham S. Simpson read a paper on the Treatment of Fractures of the Lower End of the Humerus by Acute Flexion and strongly recommended this method on account of its simplicity. An anæsthetic was absolutely necessary for the reduction, and the elbow should be bandaged in the position of acute flexion for ten days. The elbow should then be put up at a right angle and the bandage should be dispensed with on the twentieth day. Passive movements were not only useless but harmful, and massage should not be adopted until movement had returned. Skiagraphy was very desirable but by no means essential. In conclusion, he emphasised that an equally good result could be obtained by other methods, but that the advantage of this method was that it saved the medical man great bother and the patient much unnecessary suffering. He showed a typical case of a fracture treated in this way with a satisfactory result.—Mr. G. H. Pooley read a paper on Proptosis of the Eyeball. After mentioning the varieties of proptosis, he classified the causes as follows: 1. Pressure acting from behind, due to (*a*) inflammations, &c., which may be endogenous or exogenous, and (*b*) neoplasms, which may be cysts or tumours. 2. Action of unstriped muscle of the orbit in toxæmias, as in Graves's disease. He then gave details of 16 cases which had been under his care in the last three years. These included inflammatory cases following injury, cases following nasal catarrh and influenza, two fatal cases after osteo-myelitis and facial erysipelas, hydatid cyst of the orbit, recurrent sarcoma of the accessory lacrymal gland, and empyema of spheno-ethmoidal cells.—Mr. G. Wilkinson showed a Molar Tooth removed from the right bronchus by upper bronchoscopy. Owing to its size it could not be drawn into the tube, which measured 9 mm. across. In withdrawing tooth and instruments together the contraction of the rima dragged the tooth from the forceps, and it fell into the trachea, whence it was removed at the second attempt. Recovery was speedy and uneventful.

ERRATUM.—In the report of the meeting of the West London Medico-Chirurgical Society in our last issue the paper on Oral Sepsis should have been attributed to Mr. H. Lloyd Williams.

SHELL-FISH AND ENTERIC FEVER.—At the last meeting of the St. Thomas's rural district council, held at Exeter, warning notices were ordered to be placed in conspicuous places in the various districts stating that cockles and winkles must be boiled thoroughly for five minutes before they were eaten. The medical officer of health said that mussels did not seem to be a cause of typhoid fever in the district as cockles and winkles were.

Reviews and Notices of Books.

Gesammelte Werke von Robert Koch. Unter Mitwirkung von Professor Dr. G. GAFFKY, Geh. Ober-Med.-Rat in Berlin; und Professor Dr. E. PFUHL, General-Ober-Arzt a.D. in Berlin; herausgegeben von Professor Dr. J. SCHWALBE, Geh. San.-Rat in Berlin. Leipzig: George Thieme. 1912. Vol. I., pp. 706; Vol. II., in two parts, pp. 1216. Price, in boards, 80 marks; bound, 86 marks.

(*First Notice.*)

THE great men of science who illuminated the nineteenth century are gradually being taken from the scene of their labours. Pasteur, Virchow, Koch, and Lister are gone, and their names are added to the roll of the immortals. These great teachers no longer lead their disciples to fresh discoveries, but their works remain to mark the road by which we have advanced and to illustrate the method by which progress has been rendered possible.

The publication in three large folios of the Collected Works of Robert Koch is the best memorial to one of the greatest pioneers in the investigation of disease, and it is impossible to study the articles here presented without being struck with renewed wonder at the many-sided activity of the man, at the extraordinary accuracy of his methods, and at the luminous clearness of his exposition. We are assisted in recalling the life-story of the great bacteriologist by the memorial address delivered by Professor Gaffky, which is reprinted as an introduction to the present work. Born in 1844, Koch studied at Göttingen under Meissner and Henle, and in 1866 took his doctor's degree. After service in the Franco-German war, he settled as district physician (*Kreisphysicus*) at Wollstein and at once availed himself of the opportunities here presented to him of studying cases of anthrax in cattle and sheep, the bacterial cause of which affection had been discovered by Davaine. Some doubt, however, still remained as to the nature of the rod-shaped bodies seen by Davaine, and Koch proceeded to establish their true nature by observing the growth of the organisms and the formation of spores, as well as by inoculating animals and thus reproducing the disease. His first paper on anthrax appeared in the year 1876. For the purpose of this research it was necessary to introduce improved methods of studying bacteria, and a second paper (1877) describes the methods of making dried films, of staining with aniline dyes, and of microphotography, methods which are practised with little variation at the present day. The knowledge thus gained Koch proceeded to apply to the processes of disease which then formed the scourge of surgery—septicæmia and pyæmia—his researches being again carried on very largely by experimental inoculation of mice and other animals (1878). By careful and methodical work he showed the constant presence of a specific variety of bacilli in the septicæmia of mice, and of micrococci in erysipelas. Koch's work had now attracted wide attention, and in 1880 he was appointed to a post at the Imperial Health Office (*Kaiserliches Gesundheitsamt*), by which means he had suitable laboratory accommodation placed at his disposal and was enabled to devote himself entirely to scientific work.

If we follow the order of the papers in the volume before us we see that Koch devoted much time to a study of the micro-organisms present in air, in water, and in the soil, and to elaborating the methods available for destruction of germs—antiseptics and disinfectants. Thus he made careful experimental study of the effects of heat and chemical substances, and established the special efficacy of mercuric chloride as a germicide. He described a method of applying this knowledge practically in a paper on the best

method of sterilising the bilge-water of ships. These studies date from 1881–87. Soon after his appointment to the Gesundheitsamt, in 1882, appeared the announcement of the discovery of the bacillus of tuberculosis, with which Koch's name will always be associated in the minds of medical men. This triumph was due to the invention of a novel method of staining with methylene-blue and vesuvin, which made the organism readily visible in tissue, though it was soon superseded by Ehrlich's procedure, based on the acid-fast character of the bacillus. Koch was not content merely to demonstrate the organisms, but devised further a method of growing them on solidified serum, and carried out an exhaustive series of inoculation experiments on different animals. On reading his lucid accounts of his work we are struck by the completeness of his investigations and the small amount that has been added by subsequent research. Apart from his statement that the B. tuberculosis forms spores—a feature that has not been satisfactorily established, but cannot be regarded as disproved—the etiology and pathology of the disease as laid down by Koch are practically accepted still. It is noteworthy that at first Koch accepted the identity of the tuberculosis of men and of animals, and laid stress on the danger of infection from cattle. His memorable pronouncement on the distinction between the two conditions was made to the Congress held in London in 1901. In view of the controversy thus aroused and still proceeding it is well to note that Koch's actual statement was made in most scientific terms, no definite assertion of the innocuousness of bovine tuberculosis being found in his address, but only the assertion that if infection is ever conveyed from cattle to man this must be a very rare occurrence. In the same address stress is laid on the effects of overcrowding in breeding tuberculosis and on the importance of attention to the problem of housing the poorer classes—a side of the tuberculosis problem on which greater weight should undoubtedly be laid in our own country.

In 1890 the announcement was made of the discovery of a remedy for tuberculosis, the "old" tuberculin. The method of its announcement was certainly unfortunate, for Koch gave no indications as to how it was produced, and merely spoke of it as a "clear brown fluid," which kept well, and was diluted for use with water. There is no doubt that his hand was forced, and that he was compelled to publish his discovery before he had completed his researches, but it is curious that he should have adopted the method of secrecy as to the composition of the remedy, as in previous years he had blamed Pasteur for a like ethical error. It is worth noting his actual words: "Pasteur has exposed himself to criticism here owing not only to the defectiveness of his methods, but to the manner in which he has published his researches. In industrial undertakings it may be legitimate, and is, indeed, often rendered necessary by business interests, to keep to oneself the methods which have led to a discovery. In science a different custom prevails. He who claims attention and confidence from the scientific world is in duty bound to publish the methods which he has adopted, so that others may be in a position to test the accuracy of his statements." Koch certainly sinned against his own canon. He was also unduly optimistic as to the value of his remedy, stating that "commencing phthisis can without fail (*mit Sicherheit*) be cured by this means." The second variety of tuberculin (T.R.) was described by Koch in 1897, and its value has been increasingly recognised in succeeding years. The reaction that followed on the hopes prematurely raised, and the gradual process by which the position of tuberculin in diagnosis and treatment has been to some extent ascertained, are within the recollection of our readers. Thus, whereas in 1901 Koch wrote, after a discussion on the use of tuberculin, "Most physicians are of the opinion that the treatment of pulmonary tuberculosis with specific remedies, especially tuberculin, is useless and even dangerous," at the present time increasing attention is being paid to the employment of tuberculin in all forms of tuberculosis. It is realised, indeed, that not all cases alike are suitable for this remedy, and that even in favourable instances its power is limited. Yet it is becoming clear that if the early hopes conceived by Koch himself were too bright, yet he was right in believing that he had devised a weapon of real potency against the bacillus of tuberculosis.

National Insurance. By A. S. COMYNS CARR and W. H. STUART GARNETT, Barristers-at-Law, and J. H. TAYLOR, M.A. Cantab., M.B., Ch.B. Vict. With a Preface by the Right Hon. D. LLOYD GEORGE, M.P. London: Macmillan and Co., Limited. 1912. Pp. 504. Price 6*s.* net.

THIS book has been written for the purpose of describing simply and broadly the machinery of the National Insurance Act, and bringing together in a connected form matters which can only be gathered from a careful comparison of the various sections. The employer, the insured person, administration, the medical profession, benefits and public health, and finance are dealt with fully but concisely in a series of opening chapters, and the bulk of the book is devoted to a detailed analysis of the sections of the Act with numerous references to other statutes and decided cases.

The chapter dealing with the medical profession will be of the most interest to medical men. The authors commence by giving a fairly full account of the various causes which have combined to bring about the present position. They review the numerous social and legislative changes that during the last quarter of a century have adversely affected the general practitioner, such as the growth of fever hospitals and the effect of the Midwives Act, but lay the greatest stress upon the large increase in contract practice. Of this they say: "Originally started on a charitable basis to help the poor to obtain medical attendance while preserving their sense of independence, at present all pretence of charity must be abandoned." The close of this sentence is, in our view, incorrect; the element of charity enters very largely into that practice. Without discussing how far it is the abuse of the charitable element and not contract practice *per se* that has been responsible for the evils so well known to our readers, it is certainly the fear of the perpetuation and great extension of this abuse which more than anything else has aroused the hostility of the medical profession to the National Insurance Act.

Part II. of this chapter is headed "Duties of Medical Practitioners under the Act," and in the list are included "as examiners of candidates for admission to approved societies where the approved societies require them," and "granting of various kinds of certificates, such as those entitling to sickness and disablement benefits." But surely these obligations are not imposed by the Act upon medical practitioners who join the panel? Their contracts will be with the Insurance Committees and for the provision of medical attendance and treatment of insured persons. The rules for admission to approved societies will be made by the societies themselves, and these bodies will have no contracts with the medical men and no right to call upon their services in a collective capacity. Further, examination for admission is not medical treatment, in the ordinary sense of the words at least, and candidates for admission will not necessarily be insured persons. How can remuneration be paid from medical benefit in respect of a person who wishes to become a voluntary contributor and is refused by approved societies? He is not insured, has paid nothing, yet might submit himself for examination over and over again. Similar

criticisms apply to the giving of certificates for the administration of sickness and disablement benefits. As pointed out recently in our columns, these certificates impose legal liabilities upon the givers, perhaps even entailing attendance at court. We cannot find authority in the Act for requiring them to be given as part of medical attendance and treatment under medical benefit.

In Chapter II. the authors speak of "minimum benefits" and refer to Section 8 of the Act. These words do not occur in the Act, and their use is undesirable and has already led to misapprehensions. In certain circumstances, and to certain classes of persons, the benefits are substantially less than those set forth in Section 8.

The points to which we have taken exception may concern only a limited class of the community, but that class happens to be of paramount importance in a scheme of medical assurance. For the rest the book is excellently and clearly written and should be of great value to all who have any part to play in the administration of the Act. The references to decided cases and to other statutes give a vast deal of information, and we congratulate the authors in having produced a work involving great research in so short a space of time.

Microbiology for Agricultural and Domestic Science Students. By Various Contributors. Edited by CHARLES E. MARSHALL, East Lansing, Michigan, Professor of Bacteriology and Hygiene, Michigan Agricultural College. With 128 illustrations. London: J. and A. Churchill. 1912. Pp. 724. Price 10*s.* 6*d.* net.

BOTH in its object and in its methods this work constitutes a new departure in bacteriological literature. Though the range of subjects dealt with is not wider than that often found conventionally treated as bacteriology, yet the title adopted, "Microbiology," is perhaps wisely chosen, in view of the comprehensive character of the book. The object of the work, so far as may be gathered from the short introduction contributed by the editor, appears to be to furnish a microbiological basis for, and an introduction to, the study of agriculture and domestic science. This latter science appears to comprise anything which is not agriculture, and includes, among many other matters, "susceptibility and immunity, sanitation, and control of infectious or contagious diseases." We must agree with the editor on the "extreme massiveness and diversity of the subjects and on the need for comprehensive consideration." The problem to be solved is obviously a difficult one, and not rendered more easy by the fact that in England we have not at present any serious students of domestic science such as those for whom this book is intended. The method adopted for the solution of the problem is to distribute the subjects to be treated among a number of authors, and the editor is to be congratulated upon having obtained the services of 19 distinguished contributors whose names are already familiar in connexion with the particular subjects for which they are responsible. It is interesting to notice that many of them are officials in the various State experimental stations which have played so useful a part in the progress of American agriculture, and are so much needed in this country. The objects and method of treatment give the book a somewhat encyclopædic character. In the presentation of the subject matter the plan adopted is in the first place to eliminate all laboratory methods and to divide the text into three parts: (1) morphological and cultural; (2) physiological; and (3) applied microbiology. The first two portions are intended to furnish the basis for the comprehension of the applied portion which constitutes much the largest part of the book. It is impossible to deal in detail with the individual contributions, but we may state generally that they are a series of very able, if necessarily limited, monographs. On the whole, too, there are less overlapping and more uniformity of treatment than might perhaps have been expected. The amount of space allotted to the various subjects seems judicious and corresponds to their importance. The articles are not of a popular character, and indeed in many cases would appear to pre-suppose some special knowledge in addition to that afforded by a sound general scientific education. Passing over the first two parts of the book, which, though good, do not possess any very special features, the applied microbiology opens with a study of air, water, and sewage. The following section, on soil, by Professor J. G. Lipman, is important and excellently treated, but by no means in a superficial manner. Similar commendation is due to the succeeding section on the microbiology of milk and milk products, by Professor W. A. Stocking, assisted by E. G. Hastings. These two sections form the kernel of this portion of the book and are followed by the study of special industries, of which the two most important dealt with are those of food preservation, whether by physical or chemical means, and alcohol production. A chapter on the manufacture of vaccines might perhaps have been better postponed and treated together with the microbiology of the diseases of men and animals. This latter is a highly important section and occupies more than a quarter of the book. The opening chapters of this portion, dealing with the methods and channels of infection and with immunity and susceptibility, are excellent, though there is perhaps a tendency to regard facts and theories as of almost equal value. The descriptions of individual organisms follow the usual lines, and, though short, seem accurate. The list of micro-organisms described includes the protozoa and is very extensive. A section is devoted to the microbial diseases of plants. The book, notwithstanding its range of subject and the considerable number of illustrations, is not large. A rather thin paper has been used to prevent too great bulkiness, but this reduction in size has not been purchased at the expense of clearness of type.

A Text-book of Medical Diagnosis. By JAMES M. ANDERS, M.D., Ph.D., LL.D., Professor of the Theory and Practice of Medicine and of Clinical Medicine, Medico-Chirurgical College of Philadelphia, &c., and L. NAPOLEON BOSTON, A.M., M.D., Adjunct Professor of Medicine, Medico-Chirurgical College, Physician to the Philadelphia General Hospital, Pathologist to the Frankford Hospital. With 418 illustrations in the text, and 25 plates, 17 of them in colours. London and Philadelphia: W. B. Saunders Company. 1911. Pp. 1195. Price 25*s.* net.

UNDER the general heading of medical diagnosis books of very various character are collected. Some are manuals of clinical and laboratory methods, others deal more specifically with the differential diagnosis of individual diseases, and yet others are concerned with the general principles of diagnosis and their applications. The book before us belongs to none of these categories, but is in effect a text-book on medicine from which the sections on treatment have been omitted, those on symptoms reduced to a statement of essentials, and those on diagnosis amplified considerably. Although the book is a good one, and gives a moderately full account of all the ordinary conditions coming under the department of medicine, we do not think it quite merits the high expectations adumbrated in the authors' preface. They claim as new features "the brief pathologic definitions of special diseases, the illustrative cases selected from those actually observed in the hospital and private practice of the authors, and the numerous diagnostic tables designed to aid the student and practitioner in contrasting the distinguishing signs and symptoms of diseases which bear a close clinical resemblance to one another." The combination of these

features in one book may be new, but there is no novelty about them individually. At the same time, the cases, though not numerous, are carefully chosen and the diagnostic tables are clearly constructed and should prove useful.

The introductory chapter explains the methods advised by the authors for case-taking, which follow conventional lines, though but little mention is made of examination of the nervous system, which is, however, dealt with more fully in the section devoted to nervous diseases. It would none the less have improved the scheme suggested if a general outline of the method of investigating the symptoms presented by the nervous system had been included. The classification of the individual diseases follows the conventional arrangement into the various systems, and the authors have been comprehensive in their survey of medical diseases, but there is little that calls for comment in their descriptions.

The book is a very large one, it is well printed and produced and copiously illustrated. It could probably be somewhat reduced without suffering materially, as some of the illustrations, which consist simply of nude photographs with lines indicating what are described as arbitrary regional divisions, serve but little useful purpose. The letterpress is also at times diffuse and vague. As an example we may mention a description of cardiac thrombosis, which extends to half a page, and for which certain signs and symptoms are given, though it is admitted they present nothing characteristic. In a work especially devoted to diagnosis it would surely have been better to refer to this briefly as a pathological condition, the existence of which during life could be suspected rather than diagnosed. Again, on p. 610 a statement is made under the heading Sulphur—"Loosely combined sulphur, when present in the urine, is a characteristic feature of disease of the bones (myelomata), and this unusual condition is, as a rule, associated with albumosuria." A statement of this kind appears to us to be of little value unless some explanation is given of what is meant by "loosely combined sulphur." The tables summarising differential diagnosis also take up a great deal of room, but they are carefully constructed. In that on p. 237, giving the distinctive characters of ulcerative endocarditis, typhoid fever, and acute general miliary tuberculosis, two columns have been incorrectly placed, so that the characters of typhoid fever are described under the heading of acute general miliary tuberculosis. The section on diseases of the nervous system has been contributed by Dr. T. H. Weisenberg in conformity with the general scheme of the book. It gives a useful account of the individual conditions and their diagnosis. Dr. George E. Pfahler has contributed the sections describing the Roentgen ray diagnosis.

Anæsthesia and Analgesia. By J. D. MORTIMER, M.B. Lond., F.R.C.S. Eng. London: University of London Press. 1911. Pp. 276, with illustrations. Price 6*s*.

MOST books on anæsthetics contain much information which, though interesting, has the defect that it is not of much value to the general practitioner in his work. Mr. Mortimer has successfully attempted to meet the practitioner's needs and avoid this defect. Thus, although there is nothing new, as could hardly be expected in a small text-book, yet some matters generally scantily treated are here given fuller attention. The after-effects of anæsthetics, for example, and the steps necessary for dealing with them, are carefully and fully described. On the other hand, the descriptions of laryngotomy and of tracheotomy seem hardly necessary considering the extreme infrequency with which they should be required at the anæsthetist's hands and the excellent descriptions of the operations to be found in many surgical text-books.

Mr. Mortimer's descriptions of the various methods of administration are admirably clear and practical. He disapproves of chloroform, except for rare and special reasons, in all cases where the health is "not merely average but above the average." He appears to have some impartiality for Ormsby's inhaler, and thinks that the "open method" of giving ether is not as a rule successful with muscular or alcoholic subjects. Mr. Mortimer discusses very reasonably the *pros* and *cons* of the use of regulating inhalers for administration of chloroform, and appears to hold that safety can only lie in proper experience and care on the administrator's part, given which one method has little advantage over another. The author is emphatic upon the point that no anæsthetic or method should be used as a matter of routine. This is, of course, a counsel of perfection that can be followed only by those who are in constant practice with anæsthetic administration. The man who gives an anæsthetic only occasionally must have a routine method in which he may become fairly practised. This is just one of those considerations that so often make the services of the expert desirable in a case of unusual nature or difficulty. There is a good account of the generally used local anæsthetics and of spinal analgesia, which in Mr. Mortimer's opinion has no special advantages in uncomplicated cases, and is not to be recommended for general adoption for operations upon the higher regions of the body. The medico-legal position of the anæsthetist is also considered in a special concluding chapter.

The book has, we think, very well accomplished what its author set before himself to achieve.

A Dictionary of Applied Chemistry. By Sir EDWARD THORPE, C.B., LL.D., F.R.S., assisted by eminent contributors. In five volumes. Vol. I. Revised and enlarged edition. With illustrations. London: Longmans, Green, and Co. 1912. Pp. 758. Price 45*s*. net.

OUR copy of the previous edition of Vol. I. of this dictionary bears the date 1891, and hence a period of about 20 years has intervened before the work of revision was accomplished. In view of the enormous advances which chemistry has made during this time and the corresponding stimulus which chemical discoveries have given to the arts and industries it is not surprising to learn that the present edition of the "Dictionary of Applied Chemistry" is practically a new work. It would have been useless had it been otherwise. The number of contributors to the previous volume is 30, while in the present volume the list includes 47 names, representing some of the most eminent and distinguished authorities of the day. The old dictionary was complete in three volumes, but the final volume of the present work will be the fifth of the series. In 758 pages "CHE" is reached in the new volume, whereas in the old dictionary "DYS" was reached in 715 pages. A remarkable feature of the recent edition is the section on analysis, to which no less than 100 pages are devoted as against 55 in the old edition. Dr. Gilbert T. Morgan has contributed the general account of analysis, while Dr. F. Mollwo Perkin has written a very interesting summary of the methods of analysis which depend upon the separation of metals by electrolysis. The extension of this section accounts largely for the increased number of pages in the new edition of the first volume.

There are several articles of particular medical interest in this volume, amongst which may be mentioned those on Bile, Blood, and Bone, by Professor W. D. Halliburton; on Anæsthetics, by Dr. Henry Robinson; on Aloes, Balsams, Calumba, Camphor, Cascara Sagrada, by Dr. Alfred Senier, F.I.C.; on Absinthe, Arrack, Brandy, and Chartreuse, by James Connah, B.A., B.Sc., of the Government Laboratory; on Oils, including Castor

Oil, Chaulmoogra Oil, Ben Oil, by Dr. Julius Lewkowitsch, a well-known authority on the subject; on Butter, by George Stubbs, F.I.C., of the Government Laboratory; and on Bread and the Carbohydrates, by Dr. E. F. Armstrong. The article on carbolic acid omits any reference to methods of determining germicidal value, although it is stated that the "acid has powerful antiseptic properties, and is used on the large scale as a disinfectant." We bear in mind the technological limitations of the dictionary, but it seems to us that a short review of the methods which have been suggested for determining the germicidal value of coal-tar disinfectants might have usefully supplemented the references to the chemical methods of assaying carbolic acid.

The articles on various minerals by L. J. Spencer, M.A., of the Mineralogical Department of the British Museum, show that the editor was bent upon getting the best assistance possible, and the same may be said of the admirable articles on Cellulose, by C. F. Cross, B.Sc.; Dye-stuffs, by Dr. John T. Hewitt; and Brewing, by John Heron.

Sir Edward Thorpe may be heartily congratulated on securing such authoritative coöperation as he has done, a coöperation which has produced a dictionary which in all its sections, whether great or small, bears the stamp of accuracy and trustworthiness.

On the Physiology of the Semicircular Canals and their Relation to Sea Sickness. By J. BYRNE, A.M., M.D., LL.B. New York: J. T. Dougherty; London: H. K. Lewis. 1912. Pp. ix. – 569. Price 12*s.* 6*d.* net.

THE author has always been an acute sufferer from sea-sickness, and believing that the semicircular canals were in some way involved in the causation of the malady he undertook a series of experiments—rotations, aural irrigations, strong light on retina, galvanism applied to the mastoid areas, for example—to determine whether phenomena resembling those of sea-sickness could be experimentally produced. The phenomena of nystagmus the author had analysed before he became acquainted with the work already done in this direction by Neumann, Bárány, and others.

The work is dedicated to David Ferrier, and is divided into three parts: I., General Anatomical and Physiological Considerations (pp. 3–122); II., Physiology of the Semicircular Canals (pp. 125–336); III., Sea-sickness (pp. 339–525). The description of the anatomy of the labyrinth and the eighth nerve is mainly taken from Piersol's "Human Anatomy." It makes rather dry reading and the illustrations are but few and not of high quality. The remaining cranial nerves and their connexions are then described, as well as the blood-supply of their nuclei, while under the head of synopsis of anatomical connexions there is an elaborate account of the connexions of the vestibular nerve and the paths in the cord. Then comes a short description of the autonomic nervous system, the paths involved in pupillary movements, and then the part called Anatomical ends with the cerebellum and its connexions with other structures.

The canals are considered from the standpoint of animal experimentation. The author then cites his experiments on the influence of drugs upon circulatory changes that occur with rotations, and he finds that the combination of strychnine and atropine is the best in combating the effects of rotation upon the stomach and cerebrum and on the circulation. Next follow the effects of rotation upon the digestive apparatus, a very constant effect being "stasis of the stomach contents," due to the firm and protracted closure of the pylorus. This leads the author to discourse on the nervous supply of the intestinal tract. The phenomena of nausea and vomiting in rotation sickness, he thinks, necessitate the assumption of the existence of a vomiting centre. Next the effects of rotation upon equilibrium are considered, and then the effects upon the eyes. The general effects of aural irrigations and their effects on the digestive system and eyes are described. Then follow chapters on the action of the galvanic current on the canals and on the mechanism and occurrence of nystagmus, and how rotations, aural irrigations, and galvanism affect the labyrinthine receptors and the related effectors. These chapters are interesting and may prove of value to ophthalmologists as well as to physiologists and clinicians.

In the part devoted to sea-sickness the author gives elaborate protocols of his observations on the circulation, blood pressure, and other phenomena during various sea journeys, including a transatlantic trip. His experiments showed that atropine in combination with strychnine is very effective in overcoming the chief disagreeable symptoms, but in spite of the subjective sense of well-being the gastric functions were anything but normal. The author gives over four pages of "general conclusions," which should be read by those interested in this subject. The literature, etiology, and effects of sea-sickness are then considered—not the least interesting part being its relation to diseased conditions. The author ends with a description of recovery, giving outlines of treatment. Only those thoroughly conversant with recent anatomy and physiology of the central nervous system will be able to follow the author in Parts I. and II., but Part III. can be read with profit by those having no such equipment. Reference is made to 288 contributions by various authors, but some of the authors' names are incorrectly given—e.g., "Basche," "van Gehucten," "Volkman," "Grutzner," and others.

The author has crowded an immense number of statements into his pages, and has made practically all the organs of the body to do obeisance at the shrine of the semicircular canals under certain conditions.

New Inventions.

FORCEPS FOR USE WITH MICHEL'S CLIPS.

THESE two new forceps have been made by Messrs. Allen and Hanburys, Limited, 48, Wigmore-street, London, W., for Mr. Comyns Berkeley for use with Michel's clips. The larger illustration (Fig. 1) shows a pair of forceps for

FIG. 1.

approximating the edges of the wound and for carrying the clips. The teeth of the forceps are wide, so that the surgeon may obtain a good firm grip of the cut edges of the wound and hold these accurately in apposition whilst the clips are being applied. The gallery for carrying the clips is attached to the forceps in such a position that it does not in any way

FIG. 2.

interfere with the fingers holding the instrument, consequently the clips can be removed with the greatest ease, and in this respect it has been found superior to all the other forceps. The gallery is also made of specially tempered steel, which holds the clips gently but firmly, and they do not slip off after the instrument has been boiled a few

times. The smaller instrument (Fig. 2) is used for removing the clips from the gallery, and is put forward as a great improvement upon the original forceps, being somewhat larger and heavier and therefore easier to hold, whilst the serrated jaws are grooved, and thus hold the clip firmly and prevent it from dropping.

KING EDWARD'S HOSPITAL FUND FOR LONDON.

THE annual meeting of the Governors and General Council of King Edward's Hospital Fund for London, to receive the accounts and the report of the General Council for the year 1911, was held at St. James's Palace on April 20th, the Speaker of the House of Commons being in the chair. Among those present were: The President of the Hospital Sunday and Hospital Saturday Funds (the Right Hon. the Lord Mayor), the President of the Royal College of Physicians of London (Sir Thomas Barlow, Bart.), the President of the Royal College of Surgeons of England (Mr. Rickman J. Godlee), Sir Savile Crossley, Bart. (honorary secretary), Lord Rothschild (honorary treasurer), Lord Iveagh, Sir W. S. Church, Sir William J. Collins, Sir John Craggs, Sir Edgar Speyer, and Mr. John G. Griffiths (honorary secretary).

The minutes of the last meeting having been read and confirmed, letters of regret were reported, after which—

Lord ROTHSCHILD, in presenting the account of receipts and expenditure, and the balance sheet for the year ending Dec. 31st, 1911, said he was glad to announce that there was a small increase in the capital account. It was, however, much to the regret of the Council that more financial support and sympathy were not forthcoming for the Fund, as, owing to recent legislation, there might be increased calls upon the various hospitals. When the status of King Edward's Hospital Fund for London was definitely arranged by Parliament, the treasurer and Finance Committee were ordered to separate their investments into trust securities and non-trust securities. Any money given to the Fund without an expression of preference by the donor would naturally be invested in trust securities. It was always left to the donor to express a wish that his contribution should be invested in non-trust securities. The result of that legislation had been as follows: The total original value of the Fund's present investments was £1,670,864, of which £608,438 represented trust securities and £1,062,428 non-trust securities. The present value of the trust securities was £574,375, or a diminution of 5·6 per cent.; of the non-trust securities £1,119,629, being an increase of 5·4 per cent., making a total of £1,694,004, showing a net increase of 1·4 per cent. He trusted that when he had the honour to move the adoption of the accounts in another year he would be able to announce an increase of contributions.

The SPEAKER of the House of Commons formally moved the adoption of the accounts.

The motion, having been seconded by Lord IVEAGH, was then put and carried unanimously.

Sir SAVILE CROSSLEY (honorary secretary) presented the draft report of the Council for the year 1911 as follows:—

REPORT OF THE GENERAL COUNCIL FOR THE YEAR ENDING 31ST DECEMBER, 1911.

The total receipts for the year 1911 were £235,620 9*s.* 9*d.* This sum was made up as follows: Donations, £48,106 18*s.* 4*d.*; contributions to capital, £6071 10*s.* 1*d.*, including £1239 17*s.* 7*d.* on account of a legacy, together with £1444 12*s.* 3*d.* net profit on realisation of securities; annual subscriptions, £25,766 2*s.* 9*d.*; contribution of the League of Mercy, £17,000; from the Lewis estate, £13,491 5*s.* 11*d.*; legacies (other than legacies to capital), £48,576 16*s.* 6*d.*; interest from investments, £76,407 16*s.* 2*d.*; together with £200 from the trustees of the Bawden Fund. The donations include a munificent contribution of £31,500 made to the Fund by Sir Ernest Cassel, being part of a gift of £50,000 to hospitals in London and the provinces in memory of his daughter, the late Mrs. Maude Ashley. The Governors and the General Council are deeply grateful to Sir Ernest Cassel for entrusting the Fund with the distribution of this large sum, and thus enabling the awards which had already been voted to hospitals and other institutions to be increased in each instance by one-fifth.

The amount originally placed at the disposal of the Distribution and Convalescent Homes Committees for distribution was £157,500, being an increase of £2500 over the sum distributed in 1910. The supplementary grants made in respect of the special donation above referred to increased the total distribution to £189,000. Of this the hospitals received £181,200, while the remaining £7800 was distributed amongst consumption sanatoria and convalescent homes taking London patients. The total sum distributed amongst hospitals, convalescent homes, and consumption sanatoria during the last ten years (after deducting grants to the extent of £7409 16*s.* 7*d.* that have been allowed to lapse) is £1,243,840 3*s.* 5*d.*; since the foundation of the Fund a total amount of £1,475,916 8*s.* 5*d.* has been distributed. During the year the amount spent on administration (including the expenses of the Out-patient Enquiry Committee) was £1 9*s.* 11*d.* per cent. of the total amount received. The corresponding percentage for the whole period since the inauguration of the Fund has been £1 5*s.* 3*d.*

Amongst the legacies received during the year were payments of £28,301 12*s.* 1*d.* on account of the residue of the estate of the late Mr. Edward Matwear, £14,643 5*s.* 11*d.* on account of the residue of the estate of the late Mr. G. H. Swonnell, and £2936 4*s.* 7*d.* from the late Mr. B. C. Hirsch. The Council have also to acknowledge an anonymous donation of £10,000 and an annual subscription of £5000 from Mr. Walter Morrison. His Majesty the King was graciously pleased to allocate to the Fund a sum of £2000 out of the Coronation gift of His Highness the Maharajah of Gwalior. The amounts received in donations and subscriptions, excluding gifts to capital, show, as compared with 1910, an increase of £28,376 12*s.* 2*d.* The League of Mercy has this year contributed £17,000. During the 12 years of its existence the League has furnished in all £170,000 to the Fund. The Council express their best thanks to the voluntary workers who have so materially assisted the Fund by the collection of this large sum. Every eligible hospital and consumption sanatorium which applied for a grant was inspected and reported upon by the Fund's visitors, consisting as heretofore of one medical and one layman in each case. The scheme of the Convalescent Homes Committee for securing beds at consumption sanatoria and placing them at the disposal of London hospitals for the accommodation of patients urgently needing country treatment, has proved successful from the point of view both of the sanatoria and of the hospitals. The scheme has this year been extended, the number of beds secured for the coming year amounting to 35 at four sanatoria as against 18 at three sanatoria last year.

In July, 1911, the Executive Committee had under consideration the probable effect of the National Insurance Bill upon the future of the hospitals of London, and a subcommittee was appointed to collect information on the subject. A report of this subcommittee, summarising the opinions of 32 of the principal hospitals upon various aspects of the question, was published in the newspapers of July 19th, 1911. The Annual Statistical Report on the expenditure of London hospitals has again been enlarged. It now deals with 106 hospitals, and forms as nearly as possible a complete analysis of the expenditure of all the hospitals which have adopted the revised uniform system of accounts. The reductions in cost recorded in the successive issues of these reports since the comparative figures were first prepared in 1903 now amounts to a total of no less than £47,000 a year. The Special Committee, consisting of Lord Mersey (chairman), the late Lord Northcote, and the Bishop of Stepney, appointed to inquire into the methods prevailing in the London voluntary hospitals with regard to the admission of out-patients, began to sit early in the year. The proceedings were delayed by the lamented illness and death of Lord Northcote, and the committee subsequently postponed consideration of their report until the conclusion of the discussion of the National Insurance Bill. The work of the committee had, therefore, not been completed when the Council for 1911 laid down its duties. The Distribution Committee have carefully considered all schemes for the extension or reconstruction of hospitals which have been submitted in accordance with the request of the Council. The Fund has thus used its best endeavours to assist the hospital authorities in ensuring that when capital expenditure of this kind is undertaken adequate consideration is given to economy, efficiency, and the prospect of funds for future maintenance, and has particularly considered the relation of each scheme to the general question of hospital accommodation in London.

In view of the absence from England of His Highness the Duke of Teck and Viscount Iveagh, in connexion with the Coronation Durbar in India, the Earl of Donoughmore and the Right Hon. Sir T. Vezey Strong were appointed, in accordance with the provisions of the Act of Incorporation of the Fund, to act with the Speaker as a committee to exercise the powers of the Governors till their return. The Council regret to record the loss by death, during the year 1911, of two of their earliest members, the Rev. J. Guinness Rogers, D.D., and the late Chief Rabbi, the Rev. Dr. Hermann Adler. The Council desire to express their appreciation of the great services rendered to the Fund by Mr. Frederick M. Fry as honorary secretary for the four years ending December, 1911. This term included the period immediately following the reorganisation after the incorporation of the Fund by Act of Parliament, and in this, as well as in other matters, his experience in administrative work and his devotion to the duties of his office have been of special value. The Council are glad to know that the Fund will still retain Mr. Fry's services as a member of the Council and Distribution Committee, as well as in the work connected with the Out-patient Enquiry. The vacancy created by his retirement has been filled by the appointment of Mr. John G. Griffiths, who has been actively associated with the Fund for many years.

The President of the Local Government Board, in pursuance of his powers under the Act, has appointed Messrs. Deloitte, Plender, Griffiths and Co. to audit the accounts for the Fund for the year. The Council are obliged to the Press for the services they have rendered in the past, and continue to rely upon their kindly cooperation in obtaining for the Fund wider publicity and support.

The SPEAKER of the House of Commons then moved the adoption of the report. In the course of his speech, referring to the announcement that the anonymous donor, whose intention to distribute an "in memoriam" gift of £50,000 amongst hospitals had already been made public, now offered the Fund out of this sum a donation of £31,500, he said that the Council would tender to Sir Ernest Cassel the best thanks of all connected with the Fund for this most munificent donation. He concluded by allusions to the death of Lord Lister and the Duke of Fife, and by expressing the thanks of the Governors and Council to Lord Rothschild and the members of the Finance Committee for the skill and care with which they had watched over the investments.

Sir EDGAR SPEYER seconded the motion, which was carried unanimously.

A vote of thanks to the Speaker for presiding was carried unanimously.

THE LANCET.

LONDON: SATURDAY, APRIL 27, 1912.

Boiled Milk.

THE Local Government Board has issued a report on "The Value of Boiled Milk as a Food for Infants and Young Animals"[1] at a time when some authoritative review of this controversial matter is very urgently needed. The investigations on which this report is based have been conducted for the Board by Dr. JANET LANE CLAYPON, who has already made herself an authority on this question by research work carried out at the Lister Institute. Germany has been the chief field of her inquiries, and the clinical and experimental material afforded by the clinics of Professor FINKELSTEIN and Dr. BALLIN in Berlin has afforded a considerable part of the data on which the conclusions are based. The report shows evidence of careful work, a wide knowledge of the physiology of nutrition and dietetics, and familiarity with the possibilities and limitations of the statistical method—credentials which are often lacking in those who speak authoritatively on the subject dealt with in the document. In appraising the value of the heterogeneous fragments of evidence with respect to the claims of the rival parties the cue, the motive, and the personal factor of each witness must, like the figures themselves, be regarded as variables for which allowances must be made.

It is clear that the author of this report has not allowed her judgment to be influenced by the glamour of names or the prestige of authority. Facts, figures, and opinions from all sources have been submitted to a careful scrutiny and analysis. And by this method a number of treasured beliefs in the virtues of raw milk have been weighed in the balance and found wanting. One of the outcomes of this report is to show that when a young animal is fed exclusively on the milk of a different species of animal it is immaterial, as far as the nutrition of the former is concerned, whether the milk is boiled or not. On the other hand, it does make a difference whether the milk on which the young animal is fed is, so to speak, a foreign milk or whether it is derived from an animal of the same species. This is the most striking positive evidence obtained by the inquiry. As regards boiling, however, infants who are fed on milk which has been drawn from the breast of a wet-nurse, and boiled previous to use, appear to thrive just as well as when the same milk is given fresh. Although probably unavoidable, it is unfortunate that the evidence of the weight chart should be the *pierre de touche* of the standard of nutrition, especially when dealing with so delicate a matter as imponderable qualities of milk known as "antiscorbutic." Infants who are fed on condensed milk or patent foods can often show weight charts which put to shame the best results of breast feeding—but such infants are not infrequently rickety and at times scorbutic. The fact is that mere weight, apart from other factors, is but a poor measure of health or nutrition. Minor degrees of scurvy and rickets are very liable to escape notice in dealing with large numbers of infants at public clinics who are soon lost sight of in after months, but, for all that, we consider that this report clearly proves that vast numbers of infants can be fed on milk which has been boiled or otherwise heated to high temperatures without suffering any of the alleged evils which are imputed to this procedure.

We do not for a moment take the position that all infections and contaminations of milk may be safely neglected if only the milk is boiled before it is consumed, and would deprecate any suggestion that the much needed improvements in the protection of the milk-supply may be dispensed with or postponed because the householder can boil his milk and so escape the principal risks entailed by present conditions. But the moral that clearly emerges from this report is that, since the dangers of boiled milk are so problematical that they may be neglected, and since the danger of infection from unboiled milk is so real, it is wisdom to boil all milk before it is given to an infant to consume.

[1] Published by His Majesty's Stationery Office. Price 9*d*.

Medical Testimony.

THE observations which, according to the daily press, were recently made by the judge of the county court at Clerkenwell in the course of a case under the Workmen's Compensation Act merit attention here, although they are also commented upon in another column. The judge is reported to have said that one doctor had declared the plaintiff's condition to be owing to an old injury of last year, while the doctor on the other side said the opposite, with the result that he (the judge) must refer the question to somebody else—that is to say, to one of the medical referees appointed by the Home Secretary. Not content with this obviously proper statement the judge is reported to have added: "We have to put much confidence in doctors; but the fact that they come into a court to give evidence on either side is not creditable to the members of the profession. They cannot be giving their evidence honestly. They will come and say anything because they think we are fools." Whatever medical men may think, it cannot warrant the judge in suggesting that these medical witnesses were not giving their evidence honestly; and such an imputation, cast upon them from the Bench without, as far as appears from the report, any shadow of reason, is shocking to all preconceived ideas of judicial impartiality and dignity. The very fact that referees are appointed by the Home Secretary shows that the framers of the Act were fully aware that differences of opinion must arise in relation to the cases dealt with under its provisions; and that such differences, inevitable as every medical practitioner would know them to be, do not

afford even the appearance of an excuse for accusations of dishonesty against perfectly upright and honourable men.

Politicians too often do not think it necessary, prior to legislation, to obtain any adequate or accurate information concerning the circumstances to which the new legislation is supposed or intended to apply; they are too ready to enact what appears to be least likely to give popular offence, and to fling it down to be licked into shape by courts of law and by experts, at the cost, sometimes even at the ruinous cost, of the classes or individuals whom it is supposed to benefit or to protect. It was manifest to every surgeon or physician that questions relating to the real or supposed connexion between some accident or injury and the subsequent health of the person sustaining it would be certain to crop up under the Compensation Act, and that these questions, which would frequently be insoluble by any direct evidence, would be among the most difficult and most perplexing which could be presented to a practitioner. It was equally manifest that every large employer of labour would be likely to protect himself by the advice of a medical man, whose duty it would be to guard him against being swindled either by malingerers or by persons with whom the connexion between some real malady and some recent accident was at best only an after-thought. The attention of such medical men would quite excusably be directed rather towards the detection of fraud than towards the recognition of genuineness. On the other hand, the medical attendant of the patient concerned, assuming that his own suspicions of fraud had never been aroused, would be quite likely to defend the opinion of the case upon which he had acted from the beginning, and almost to resent the suggestion that he had himself been more or less the subject of deception. With most patients, moreover, there is some tendency towards an exaggeration of symptoms or of disabilities calculated to support the view which they are themselves anxious to maintain; and we need not look beyond these facts in order to find a sufficient explanation of differences of opinion concerning questions which do not admit of demonstration. The real difficulties arise from the frequent incapacity of the tribunal to which such cases are submitted for ultimate decision, and from the inability of judges, counsel, and jurors to understand the presence of unknown quantities which may render the problems containing them insoluble. It is, in most cases, absolutely impossible for a medical witness to make a non-medical audience understand the precise nature of the doubt which restrains him from a positive expression of opinion; and any endeavours which he may make in this direction are, almost as a rule, baffled by the desire of counsel to present only a confused issue to the jury.

In these circumstances it is manifestly impossible for medical witnesses to be too cautious, either for their own credit or for the credit of the profession to which they belong; nor can they abstain too carefully from expressing anything like certainty in conditions in which certainty is not attainable. In the cases arising under the Workmen's Compensation Act the stakes are usually moderate, and the issues are thrashed out before tribunals which come but little under the notice of the public, but the hasty words of the judge of the Clerkenwell county court are only too likely to be ignorantly re-echoed by some who should know better.

The Spread of Plague by Ingestion?

ONE of the most important items of knowledge concerning communicable diseases is clearly their mode of transmission. As soon, for instance, as the transmission of malaria and yellow fever by mosquitoes was clearly established, medical science was able to devise methods for the prevention of these diseases which have reduced their terrors very greatly and which could not have been devised without that knowledge. In some diseases it is more than possible—it is likely—that more than one mode of transmission exists. That this may be the case with plague seems to be the outcome of an observation of Passed Assistant Surgeon GEORGE W. MCCOY, of the United States Public Health and Marine Hospital Service,[1] who has recently studied the data bearing on the prevalence of plague in Hawaii, where cases of the disease, both in human beings and in rodents, have been occurring since 1900. Dr. MCCOY found that on the north, or Hamakua, coast of the island, out of ten human cases all except one had a bubo in the neck, while not one had a bubo in the inguinal region. The tenth case was one of axillary bubo. This finding entirely reverses the condition usually found in other places (and, indeed, in parts of Hawaii other than the Hamakua coast) where the usual percentage (86 per cent.) of inguinal buboes obtains. While, of course, this may be a mere coincidence, Dr. MCCOY thinks that some other explanation for the peculiar condition must be sought. In this connexion he points to the fact that when plague is induced in animals experimentally by feeding them with infected material, in the great majority of cases a bubo develops in the neck. He, therefore, suggests that in such cases in human beings transmission may have been effected, not through the usual medium of flea-bites, but through ingestion. The confirmation of this view would not, of course, in any way militate against the recognition of the preponderating intermediacy of the rat and its flea; it would simply call attention to another weak spot in the defence that needs guarding.

While admitting the interesting nature of the cases reported by Dr. MCCOY, it would hardly be prudent to base upon so small a number of instances any conclusions as to the spread of plague in man by ingestion. Many investigations in this direction have already been made by very competent experts without bringing to light any unassailable evidence that this is a method by which plague is transmitted to man and which need be seriously considered in preventive measures. The commonest article of food among native races in the East is grain in one form or another. Experimentally it has been shown that when grain is artificially contaminated by cultures of plague bacilli these organisms die out in a short time, as soon, in fact, as they have become well dried. Moreover, grain is almost universally cooked before being eaten, and this, of course, necessarily secures destruction of the microbes. Nor is it

[1] Public Health Reports, April 5th, 1912. Vol. xxvii., No. 13. Washington: Government Printing Office.

easy to see how articles of food consumed uncooked by man can readily become infected by plague bacilli. The Commission for the Investigation of Plague in India came to the conclusion, after many feeding experiments, that animals which are susceptible to plague by inoculation may be infected by feeding, but before this can happen an immense dose of highly virulent material has to be administered—a condition, it may be remarked, not likely to occur commonly in nature. The present position of our knowledge on this subject may be summarised thus: Specific contamination of food might, theoretically, upon occasion and under certain conditions, lead to man becoming infected by plague; but the probabilities of plague microbes reaching articles of diet which are consumed in an uncooked state, and on which the bacilli could multiply, are extremely slight. The intestinal tract cannot be regarded as a likely or favourable channel for infection, as large quantities of virulent plague organisms are needed to give rise to the infection. Finally, it may be asserted that up to the present there is absolutely no epidemiological evidence pointing to the spread of plague through the agency of food.

Annotations.

"Ne quid nimis."

ROYAL HONOUR TO THE PROFESSION.

WE are very glad to learn that His Majesty the King, who will be accompanied by Her Majesty the Queen, will open the new buildings of the Royal Society of Medicine. The ceremony will take place on Tuesday, May 21st, at 3.45 P.M.

THE PERCEPTION OF SPACE.

SOME interesting experiments on the functions of the vestibule as an organ for the perception of space were reported by Dr. F. L. Golla in a paper read before the Neurological Section of the Royal Society of Medicine.[1] The method adopted was to place the subject of the experiment with closed eyes before a screen ruled in millimetre squares and to get him to indicate on the screen his idea of a point exactly opposite to a point on his own body touched by the experimenter. When the degree of accuracy attained had been thus noted, the subject was seated in a rotating chair with his head fixed and the screen held in the same relative position. After undergoing 30 revolutions at a speed of one revolution in five seconds, he was again made to indicate the points touched, and it was found that he tended to place the point in space before him a considerable distance towards the side of the screen away from which rotation had been made. If the subject's head were fixed so that the line passing between the two ears was vertical, a vertical displacement of the point touched was observed. A curious case bearing on the same subject was recorded in our own columns by Mr. Macleod Yearsley,[2] in which a patient who had suffered loss of one labyrinth by disease and had had the other destroyed as a remedy for the resulting vertigo, was found to be quite unable to guide his movements or realise his position in the dark. Thus, if he got out of bed in the night he remained collapsed and helpless on the floor till help arrived. Dr. Golla adopts Cyon's explanation of our ideas of space—viz., that there is a continuous stream of sensations of space derived from the internal ear which blends with and qualifies all other sensations. It is interesting to speculate as to whether a similar organ will some day be discovered to account for the remaining great metaphysical problem—our idea of time.

[1] Proceedings of the Royal Society of Medicine, vol. v., No. 5, 1912, Neurological Section, p. 123.
[2] THE LANCET, Sept. 19th, 1908, p. 871.

THE METROPOLITAN WATER-SUPPLY.

WE publish in another column a brief review of the recent reports—namely, the fifth annual report and the seventh research report which have been made to the Metropolitan Water Board by the director of water examination, Dr. A. C. Houston. The reports contain a record of most interesting and important scientific work which must be of very great use to the Metropolitan Water Board and to the vast community whose interests are watched over by that Board. These records of investigations of the metropolitan water will be of the utmost value in guiding the Board in the lines along which the processes of water purification must go in the immediate future. It is very satisfactory to know that the scientific work of Dr. Houston fully demonstrates the fact that the purity of London's drinking-water is being adequately maintained, and under the valuable guidance and help afforded to the Board by his researches there is every reason to believe that this purity will be adequately safeguarded in the future. Those who know the magnitude of the problems involved, and the difficulty of their solution, and who remember the sinister forebodings of many shrewd observers, will see the satisfactory nature of such statements.

PHYSICAL FITNESS OF THE TERRITORIAL FORCE.

AS a nation we are accustomed to regard our national defenders, whether naval or military, as a body of men able to go anywhere and do anything—that is, properly trained in their duties and in a condition of health and fitness for service in any part of the world. Probably this belief is justifiable, and at any rate we need not be ashamed of our past record, although there have been occasions when the training, both of mind and body, has been less than could have been desired. As regards the Territorial Force, however, the position is not all that could be wished. It is generally allowed that the material is good, but it is to a great extent raw. The question has on several occasions been under the consideration of the military authorities, and we invite our readers' attention to a recent discussion (p. 1133) at the United Services Medical Society, opened by Major H. E. M. Douglas, V.C., D.S.O., of the Royal Army Medical Corps, on the Special Weaknesses, from a Medical Aspect, of Volunteer Troops. The dangers attending concentration of large bodies of men in camps have been abundantly illustrated in the experience of the United States army, both in the Civil War and in the more recent volunteer camps in 1898; enteric outbreaks can be guarded against by preventive inoculation, and small-pox by revaccination; the former can be carried out on mobilisation, but the latter should be seen to during peace time. Systematic physical training, to produce a condition of fitness and avoid risk of heart strain, should also be undertaken beforehand; also instruction in personal hygiene, care of the feet, and the exigencies of camp life—all matters easily comprehended, if undertaken in time, and with opportunity for the development of healthy habits and a sanitary conscience. Such habits become second nature if allowed time to get ingrained into a man; but time is essential. Such training should be undertaken beforehand at leisure, not deferred to the hour of mobilisation, when urgent military necessities will inevitably

take precedence. We commend Major Douglas's paper to the consideration of all our readers who are interested in the Territorial Force.

A DEPARTMENTAL COMMITTEE ON INDUSTRIAL DISEASES.

A COMMITTEE to inquire and report whether certain diseases can properly be added to those enumerated in the Third Schedule of the Workmen's Compensation Act, 1906, has been appointed by the Home Office. The diseases in question are cowpox, Dupuytren's contraction, and clonic spasm of the eyelids apart from nystagmus. The members of the committee are: Mr. Ellis J. Griffith, K.C., M.P., Parliamentary Under-Secretary of State for the Home Department (chairman); Sir Thomas Clifford Allbutt, K.C.B., M.D., F.R.S., Regius Professor of Physic, Cambridge University; His Honour Judge Alfred Henry Ruegg, K.C.; and Dr. Thomas Morison Legge, Medical Inspector of Factories. Mr. Alexander Maxwell, of the Home Office, has been appointed secretary to the committee, and all correspondence on the subject of the inquiry should be addressed to him.

HELIOTHERAPY IN TUBERCULOUS PERITONITIS.

A SHORT time ago we referred to the remarkable results obtained by heliotherapy in the treatment of surgical tuberculosis on the Mediterranean littoral [1] and in the Swiss mountains.[2] In the *Gazette Médicale de Paris* of Jan. 24th M. P. Chatin and M. Gaulier have reported two cases of tuberculous peritonitis successfully treated at the Charité Hospital, Lyons. A boy, aged 12½ years, was admitted on March 5th, 1911, with tuberculous peritonitis. Under medical treatment, which included the administration of cacodylate of sodium, he went from bad to worse. On June 4th there were considerable emaciation, an evening temperature of 102·2° F., diarrhœa (five or six stools daily), ascites, pain and puffiness in the left flank, and right pleural effusion extending three fingers' breadth above the angle of the scapula. He weighed 35 kilogrammes, and had lost 8 kilogrammes since his admission. Solar baths were commenced, and the diarrhœa was almost immediately arrested; on the following day he passed a normal stool. After the sixth day the temperature fell. During June and July it oscillated between 98·6° in the morning and 100·4° in the evening. In August it became completely normal. His weight remained stationary for a month. Then the appetite gradually began to return and his weight increased until it attained 52 kilogrammes. The physical signs rapidly diminished. At the end of a month the pleural effusion had almost completely disappeared, the abdomen was supple, and there was only slight tenderness in the left flank. After 105 séances he was completely cured. In the other case a boy was admitted with tuberculous peritonitis on Dec. 17th, 1910. There were considerable ascites and an umbilical hernia. The abdomen measured 69 centimetres at the umbilicus, the general condition was bad, and there was laryngitis. Under medical treatment the ascites diminished, the girth of the abdomen falling to 65 centimetres, but the general condition remained bad, and there were anorexia and diarrhœa (three or four stools daily). The evening temperature was as high as 102·2°. On June 7th solar baths were commenced. As in the preceding case all the symptoms rapidly improved. During the first week the temperature rose to 104°, and then it commenced to fall. After 59 séances it never rose above 100·4° in the evening. The child gained four kilogrammes in weight, and that in spite of the disappearance of the ascites. After 80 séances recovery was complete. The treatment is carried out as follows. The patients are insolated daily as soon as the temperature in the sun attains 86° F. The best temperature for the purpose appears to be 104°, but exposures for four consecutive hours to a temperature as high as 131° were borne without inconvenience. At first the patients were given two exposures of two hours each—one in the morning, the other in the afternoon; but in consequence of the great heat the afternoon bath was not so well borne as the morning. It was therefore stopped and the morning bath increased to three or four hours. No absolute rules can be laid down for the duration of the baths. The children must be carefully watched. Some will bear from the first a bath of an hour, others will require a fortnight or even longer before this duration can be reached. As a rule it is possible to commence with a bath of 15 minutes and increase the duration by five minutes daily. When the skin is well pigmented the duration can more easily be increased until three or four hours is attained. The children are seated in arm-chairs and the head is protected against the sun's rays by a screen fastened to the back of the chair. During the first five days the abdomen alone is exposed to the sun, then the whole trunk. The children are not fatigued by the baths, but it is well to let them rest for half an hour after them. As the skin becomes moist it must be dried. No bad effects have been observed from the baths. The body temperature rises on an average about 1°F. after the bath; in exceptional cases a rise of 2° occurs or, on the other hand, the temperature falls.

[1] THE LANCET, Nov. 12th, 1910, p. 1435.
[2] THE LANCET, Dec. 3rd, 1910, p. 1638.

THE POISON OF LABURNUM.

CASES of poisoning through eating the seeds of the common laburnum tree (cytisus-laburnum) have been recorded on several occasions in our columns. The victims are generally children, but a more recent case disclosed the fact that three women had partaken of a dish in which laburnum flowers had been used as a flavouring agent in mistake for those of Robinia pseudacacia (locust tree). The most constant symptom appears to be vomiting, succeeded by prostration and torpor, which may or may not be preceded by a stage of excitement. Other symptoms described are delirium, hallucinations, mydriasis, muscular twitchings, convulsions, salivation, diarrhœa, vertigo, pallor, and cold sweats. The first symptom may be a feeling of numbness in the hands. When death occurs it is due to respiratory paralysis. The seeds yield on suitable treatment an alkaloid called cytisine and its physiological action has been studied by a number of observers. The most recent addition to this study has been made in the Wellcome Physiological Research Laboratories, by Dr. H. H. Dale and Mr. P. P. Laidlaw, B.C., who confirm the impression made by perusal of the accounts of previous workers that the action of cytisine is closely similar to that of nicotine. The excitatory action of the laburnum alkaloid on skeletal muscle is reported to be similar to, but weaker than, that of the tobacco alkaloid; in curare-like action the two appear to be nearly identical. The similarity with nicotine is close, so that the observers are led to doubt whether any instance of such exact parallelism is known to exist in the case of substances which are not close chemical relatives, except in the case of the apparently still closer resemblance in action to nicotine exhibited by lobeline. Though little is known of the constitution of cytisine, there are indications that its structure in some points resembles that of nicotine. The observers' experiments lend no support to the suggestion of cytisine possessing therapeutic value, but they suggest that it could be used in place of nicotine for physiological investigations. There are advantages in its easy preparation, with large yield from the readily and cheaply obtainable laburnum seeds, its stability, and in the

ease with which it can be purified. The alkaloid crystallises well and can be distilled under reduced pressure.

THE NEW PREMISES OF THE ENGLISH CONJOINT BOARD.

THE offices of the Conjoint Board of the Royal Colleges of Physicians of London and Surgeons of England will be moved to the new Examination Hall, 8–11, Queen-square, Bloomsbury, to-day, Saturday, April 27th, from which date all business connected with the examinations of the Board and the diploma of Fellow and licence in Dental Surgery of the College of Surgeons will be transacted in the new building.

TUMOURS TO WHICH ATTENTION IS FIRST DRAWN BY HÆMORRHAGE INTO THEIR SUBSTANCE.

IN the *North of England Clinical Journal* for January Mr. G. Grey Turner has reported an interesting case illustrating the fact that attention may first be drawn to a tumour by hæmorrhage into its substance. A woman, aged 49 years, was seen in consultation. The history was that she was quite well until a year ago, when she began to suffer from attacks of "indigestion." There were pain and a feeling of fulness after food, but no vomiting. She also suffered from bearing-down pain and scalding on micturition. Under treatment these symptoms cleared up, and for some months she appeared to be in good health. On the evening before the consultation, while walking up hill she was seized with severe pain in the right side which rendered it difficult for her to reach home, although the distance was short. In the morning the pain had only slightly abated, and she was seen by Dr. C. C. Burman, who found a temperature of 102° F. and a big rounded swelling in the position of the gall-bladder. On examination she looked very well, though the temperature was 103° and the swelling was exceedingly tender. Mr. Turner could sink his hand behind it, but could not feel the kidney apart from it, though he could separate it from the liver. He concurred in the diagnosis of calculus impacted in the cystic duct, but was surprised that the patient had not vomited. Dr. Burman suggested that the swelling might possibly be kidney, but there had never been blood or pus in the urine. The transverse gall-bladder incision was made. The lump proved to be a growth in the upper and anterior part of the kidney in such a position as to bulge forward behind the gall-bladder, simulating distension of the latter. The kidney was removed. It contained an encapsuled soft tumour, which did not invade the pelvis, thus accounting for the absence of hæmaturia. The tumour was exceedingly soft ("brain-like") and very vascular. It was largely occupied by recent clot, the result of hæmorrhage into its substance. Microscopically it was adenomatous, suggesting a suprarenal origin. Uninterrupted recovery ensued and the patient remained in good health for 18 months. Then she was attacked with cerebral hæmorrhage which proved fatal in ten hours. There was no necropsy, but it is possible that there was a secondary growth in the brain, from which hæmorrhage had occurred. The case illustrates how sudden hæmorrhage may be the means of drawing attention to a pathological condition. The pyrexia may be explained by the hæmorrhage, of which it is a well-known accompaniment. Mr. Turner refers to another case illustrating the same point and recorded by Mr. H. B. Angus. A boy, aged 7 years, was taken to hospital by a policeman with the story that he had swallowed a penny rubber ball which was choking him. He was rather cyanosed and obviously had a difficulty in breathing. About the position of the cricoid cartilage was a soft cystic swelling 1½ inches in diameter. At first the story was credited, and the supposed ball was seized from outside and an attempt made to press it into the mouth. The result was to cause increased cyanosis and stridor. The mouth was then gagged and an attempt was made to reach the ball with the finger; this failed. A pair of œsophageal forceps was passed down into the œsophagus, but no impediment was felt. The boy swallowed a glass of water easily. Bimanual examination with one finger in the throat and another outside showed that the mass was in front of the œsophagus and trachea. The story was therefore discredited, and it was concluded that there was either thyroid cyst or a dermoid (thyroglossal) which had suddenly become enlarged, perhaps from hæmorrhage. The boy's mother then arrived, and it was found that there had been a lump in the throat for some months, which had caused occasional dyspnœa, but had never been so large as it was now. Mr. Angus saw the case at this stage and diagnosed thyroid cyst. Removal of it through a vertical incision gave immediate relief. The specimen proved to be a thyroid cyst distended by recent hæmorrhage.

SCHOOL HYGIENE AT THE THIRD PORTUGUESE CONGRESS OF PÆDAGOGY.

THE Portuguese League of Instruction, of which Dr. Bernardino Machado, the well-known ex-Minister of the Republic, is president, has been responsible for the Third Congress of Pædagogy, which took place on April 9th, 10th, and 11th, the opening being presided over by the President of the Republic. This Congress has continued the work of progress initiated by the League at the two previous Congresses. The work was perfectly organised in consequence largely of the extraordinary energy and *savoir faire* of the secretary, Dr. Annibal de Magathaes. The second section, that of School Hygiene, put forward nine recommendations: (1) That classes should be held in sanitary rooms; (2) that medical inspection should be perfectly organised as soon as possible in all schools in which it is not as yet in force; (3) that a canteen should be attached to each primary school; (4) that the curricula and time-tables should always be so arranged as to avoid over-pressure; (5) that until all schools shall possess the necessary conditions for the practice of physical exercises the municipalities shall provide in the gardens and public parks free spaces to be reserved for the children of the primary schools; (6) that the attitudes of the pupils should be rigorously supervised to avoid the production of deformities; (7) that the Government ought to organise the teaching of gymnastics in the normal schools upon a new basis; (8) that a Central Institute of Physical Education should be established at Lisbon; and (9) that hygienic books of uniform type should be adopted in all schools. The Senate of the Republic has expressed its approval of the work of the Congress and its desire that the recommendations of the Congress should be realised with the least possible delay. The movement is directed particularly to the betterment of the hygiene of the primary schools; the secondary schools leave little to be desired. Nearly all the Lycées, at least in Lisbon, possess splendid sanitary buildings, with fine gymnasiums, playgrounds, and so forth. Medical inspection is already in force in them, and if it does not yet work perfectly in all the Lycées, that is due to the fact that the number of school physicians is too limited. The teaching of physical education and medical inspection prevail also in a number of private schools, among which may be cited two model institutions: the Escola Officina No. 1 and the Academia de Estudos Livres. There are also private schools of physical education, of which some, such as the Portuguese Gymnasium Club, have medical inspectors for the supervision of the medical exercises. The putting into practice of the eighth recommendation—viz.,

the establishment of a Central Institute of Physical Education—will certainly give a fresh impulse to the movement now operative in Portugal, which has for its aim the betterment of the national physique. Dr. Moraes Manchego presented to the Congress a communication on the growth of the Portuguese child. He has investigated the height and mean weight at different ages, and finds that the growth of the child takes place in two periods—in the space comprised between the tenth and the twentieth years. There are two maximums in this part of the growth curves. The absolute maximum is at 16 years. In the comparative table of weights and heights of European peoples during growth the Portuguese child shows a certain superiority, notably over the Italians, who are decidedly inferior in point of physical development.

AMŒBIC DYSENTERY CONTRACTED IN SCOTLAND.

AMŒBIC dysentery is often regarded as exclusively a tropical disease, but it should not be overlooked that it may also occur, under favourable conditions, in temperate regions; some writers, indeed, assert that the malady is at present endemic in Europe in certain districts of Russia, Germany, and Italy. It has also been contended that as medical science advances, and the recognition of the disease is rendered easier, amœbic dysentery will be found to be of more frequent occurrence and to have a wider distribution than has hitherto been believed. A necessary factor for the multiplication of entamœba histolytica, the specific organism of this malady, is a high atmospheric temperature such as was present in this country during the summer and autumn months of last year. It cannot be denied that the pathogenic organism of amœbic dysentery must often be imported into Britain from the tropics by individuals returning home after having had an attack of the disease, some of whom continue to act for an indefinite period as carriers of the infection. Such persons pass in their stools day by day numbers of resistant encysted entamœbæ which may ultimately find their way into sources of water-supply if these be left unprotected.[1] It is probably owing to the comparatively high standard of sanitation in our own country, particularly as regards purity of water-supplies and the provision of efficient methods of excrement disposal, that even in hot summers amœbic dysentery does not seem to spread with us. But that it can spread under favourable conditions at home cannot be doubted. In the March number of the *Edinburgh Medical Journal* Major D. G. Marshall, I.M.S. (retired), lecturer on tropical diseases in the University of Edinburgh, gives an instructive account of a case of this disease in a man who had never been out of Scotland, affording an instance of the way in which an outbreak may be originated. It appears that in November last a young Scotch ploughman from an East Lothian farm was admitted into the Edinburgh Royal Infirmary suffering from symptoms suggestive of amœbic dysentery, the diagnosis being subsequently confirmed by microscopical examination of the stools. He had never been out of this country, but not long ago a time-expired soldier from India came to reside in the cottage next door to him. Owing to the drought of last summer the piped water service which supplied the farm ran short, and water for drinking purposes was taken from a surface spring close to the farm; this source admittedly was liable to contamination from surface impurities. The workers on the farm, like those in many other agricultural districts, did not make use of privies provided for them, preferring to defæcate in the open. After careful investigation Major Marshall came to the conclusion that the ploughman had contracted his illness through drinking water from the surface spring which had been contaminated by the dejections of the time-expired soldier from India. The latter, however, denied that he ever had dysentery, but freely acknowledged that while he was stationed at Bangalore many of the men of his regiment were removed to hospital suffering from attacks of that disease. Microscopic examination of the ex soldier's stools showed the presence of a number of spores, but unfortunately circumstances rendered it impossible to determine by the microscope alone whether or not these were the spores of entamœba histolytica, and animal experiments proved equally inconclusive. It is possible that the soldier had had dysentery in a mild or unrecognised form at Bangalore. Assuming that Major Marshall's view is, as it appears to be, the correct one, it might naturally be expected that the polluted surface spring would have given rise to other cases. Inquiry in this direction failed to discover other attacks save one—namely, that of a woman on an adjoining farm, who was taken ill before the ploughman with similar symptoms, her attack lasting a fortnight. Examination of her stools, conducted in the circumstances some time after her recovery, failed to show the presence of amœbæ or spores. It remains to add that the ploughman made a good recovery after treatment with large doses of ipecacuanha and lavage of the lower bowel with a solution of quinine. The case is claimed by Major Marshall to be worthy of a permanent record as being the first originating in Great Britain that has been diagnosed during life. A similar instance, it appears, was reported at Birmingham a few years ago by Dr. R. Saundby and Dr. J. Miller, but the true nature of the illness was only discovered after a post-mortem examination had been made. The case, in our opinion, is important, as it seems to emphasise the view which we have already on various occasions expressed in these columns respecting the great influence which general sanitation exercises in the prevention, directly or indirectly, of many diseases, not only of those usually classed as indigenous, but also even those of exotic origin.

[1] Vide THE LANCET, March 2nd, 1912, p. 596.

ASPARAGUS.

EACH asparagus season brings with it the query, Is asparagus wholesome? and the reply which we have given to numerous correspondents on previous occasions has been that no evidence has been forthcoming in physiological inquiry which was condemnatory of this peculiarly agreeable vegetable. At the risk of repeating what has been written before, we may enumerate what physiological study has said about the matter, knowing that many of our readers will have inquiries made of them by patients and their anxious friends. In certain old text-books of homely medicine asparagus will be found described as a useful stimulant to the kidneys, as exercising gently sedative effects on the heart, calming palpitation or nervous excitement of that organ; and comparatively modern research confirms this, inasmuch as it has demonstrated that asparagin, an active principle not peculiar to asparagus, but present also in potatoes, marsh mallow, liquorice, belladonna, and other plants, is a palliative in the heart affections which are attended with excited action of the pulse. As to any effect upon tissue change there appears to be little or none, although some observers have definitely asserted that asparagus freely eaten deters the putrefactive process in the intestine and thus spares the proteins of food from destruction. Medicinally, asparagin has been given in quite small doses in cardiac dropsy and chronic gout. Asparagus, of course, contains purins, asparagin itself being a purin; but oatmeal, beans, and lentils contain a much larger percentage. Lastly, the soothing effects of the mucilaginous juice upon the mucous membranes of the mouth and pharynx add to the

virtues of the tender shoot. There may be very special cases in which asparagus is contra-indicated; but, generally speaking, scientific evidence, far from being against the use of asparagus in the diet, is rather in favour of it. Most people like it, and there is no evidence that its enjoyment is unsafe.

THE LONDON AND COUNTIES MEDICAL PROTECTION SOCIETY.

WE have received a copy of the annual report of the council of this society, together with the balance-sheet, and the report bears witness to the valuable and excellent work which has been carried out through the year. The year 1911 has been an anxious one for the council, inasmuch as it was the first year in which certain alterations in the memorandum and articles of association came into force, together with an increase in the subscriptions. The subscription in future will be £1 instead of 10s. The privileges of members remain exactly as before with respect to the payment by the society of the whole of the costs of conducting any cases which the society undertakes for its members, but with the increased subscription the society will also pay costs of the other side and damages up to an amount together not exceeding £2000 for any one member in any one year, and this measure will obviate the necessity of members personally insuring against such costs and damages. The council believes that this change has received the warm approval of the great majority of the members of the society. The records of the cases which the society brought before the law courts during the year form interesting reading and accentuate the advantages which accrue to practitioners by membership of such a society. A very large amount of work is, of course, carried out by the council and officials which does not necessitate an appeal to the courts, but nevertheless is of the greatest value to the members. The report states that a considerable number of applications were received for advice in difficulties arising out of professional practice. Examples of these are given in the report as instances of inquiries received and as indicating some of the questions on which advice is sought. The questions and opinions asked covered a wide field, and doubtless those who asked for guidance obtained substantial help in solving the problems which confronted them.

SMALL-POX IN CANADA.

THE Victoria, B.C., Medical Society held a meeting lately in which Dr. Ricketts's proposal to diagnose small-pox by the distribution of the rash was discussed. During the discussion it was mentioned that after 1898 and the Spanish-American war a disease called "Cuban rash" passed through the United States and into Canada, where it is considered to be small-pox, though without mortality even when confluent. Was it this disease that was imported into Liverpool from America in 1902, and became the "very mild infection" spoken of recently by Dr. Franklin Parsons at the Epidemiological Society? Similar slight cases of small-pox were also reported from Mexico. The President, Dr. E. C. Hart, mentioned that some years ago he had seen a wagon accident in the streets of Victoria, in consequence of which a large box conveyed by two Chinamen was opened and found to contain a Chinese man with small-pox in the confluent stage. He was being smuggled out of town to save trouble, but the curious thing was that no other case of small-pox occurred in Victoria at that time. In explanation of the above discussion it may be stated that Dr. Ricketts lays stress on certain points in connexion with the local distribution of the (true) rash as being valuable factors in the differential diagnosis between small-pox and other conditions, especially chicken-pox. In addition to the actual number of pocks on the face as indicating the severity of an attack, he regards as valuable points in the recognition of small-pox the relative copiousness of the rash on the face in comparison with the neck and trunk, and on the distal rather than the proximal portions of the extremities. Further, Dr. Ricketts places importance on the relative aggregation of the eruption on parts of the surface liable to irritation, friction, or pressure, such as the forehead, wrists, ankles, hands, and the extensor aspect of joints, in comparison with any particularly well-protected parts, like the axillæ, or other depressions of the surface, as also the flexures of the limbs. He considers this distribution of the eruption of value, not only in differentiation of small-pox from chicken-pox and measles, but also from drug eruptions and from pustular skin conditions. Indeed, having regard to the fact that the development of the individual lesions varies so much in separate attacks owing to the varying degrees of protection produced by vaccination, Dr. Ricketts regards the distribution of the skin lesions as the most reliable diagnostic sign, as it follows the same law both in modified and unmodified small-pox.

INDUSTRIAL ACCIDENTS.

THE Third International Medical Congress on Industrial Accidents is to be held in Düsseldorf from August 6th to 10th this year. Previous conferences have taken place at Liège (1905) and Rome (1909), and the published proceedings of these have provided an immense amount of valuable information respecting this important modern branch of medicine and surgery. The questions to be submitted for discussion this year are exceedingly practical, and such an international exchange of views as will be provided should be of material assistance in concentrating and adding to our knowledge in this branch of study. They are as follows:—(1) Comparative study of the Compensation Acts in force in various countries; (2) importance of early institution of functional treatment in cases of industrial accident; (3) traumatic diseases of the heart and blood-vessels; (4) traumatism and arthritis deformans; and (5) productive and aggravating influence of trauma on cancer. Although these subjects are purely medical and of particular interest to medical referees and medical officers of accident insurance companies, the membership of the congress is not restricted to the profession but is thrown open to representatives of insurance companies and associations of employers or workpeople. Whilst it is hoped that a good number of British representatives will visit Düsseldorf, anyone interested may become a member and thus secure a copy of the proceedings without actually attending the meetings. The propaganda work for this country is being undertaken by the Association of Certifying Factory Surgeons (Incorporated), the secretary of which will be pleased to answer any inquiries addressed to 16, John Dalton-street, Manchester. Professor Liniger, Elisabeth-str., 63, Düsseldorf, is the general secretary of the Congress.

"MURPHY'S CLINICS."

THE importance of clinical teaching is much more appreciated at the present time than in the past. The day when the systematic lectures were the most important part of a medical curriculum has long gone by, and though lectures still continue they have lost much of their former prestige. There is much clinical teaching of the most valuable kind which reaches but a very small circle of hearers, and many have felt that it might be well if some of it could have a wider medical public. Some 20 years ago Dr. Byrom Bramwell published a number of his clinics, and they were

much appreciated, but so far as we remember they did not continue for very long. We are not referring to definite clinical lectures, but the clinical remarks which a surgeon makes when he is examining a patient or is performing an operation. The first number has recently appeared of a publication which is to be issued every second month, and in it are recorded almost verbatim the clinical teachings of Professor J. B. Murphy, of Chicago. The instruction is, it is unnecessary to say, very good, for Dr. Murphy is an excellent teacher, who has a full knowledge of his subject, and possesses the power of imparting it to others. We think that there is room for such a work as this, for the tone of the wording is striking and very typical of the author, though sometimes the absence of the patient detracts somewhat from the value of the remarks. The lectures, if they may be dignified by such a name, form interesting reading, and many who are unable to obtain access to good clinical teaching will profit by the perusal of this book. The opinions are expressed with an airy lightness and with a positiveness which refuses to recognise any possibility of difference of opinion, though those who know cannot but acknowledge that many of them are open to discussion, and much that is here taught as certain is more than doubtful; still, in spite of this, we must express a favourable opinion of the intention and also of the execution of the idea. The dogmatic statements of a great surgeon and teacher must have much in them of great value.

AT the next meeting of the Surgical Section of the Royal Society of Medicine (Tuesday, May 14th, at 5.30 P.M.) Professor Gilbert Barling will open a debate on the Surgical Treatment of Aneurysm, and on the same day will be held a large exhibition of specimens of aneurysm of all kinds collected from the various metropolitan museums. To those who are interested in the subject a very unusual opportunity will thus be afforded for the study of aneurysm.

THE METROPOLITAN WATER-SUPPLY.

THE fifth annual report on the results of the chemical and bacteriological examination of the London waters for the 12 months ended March 31st, 1911, by Dr. A. C. Houston, the Director of Water Examination to the Metropolitan Water Board, was published a few months ago. Dr. Houston has followed up the publication of his very valuable fifth annual report by the recent issue of a most interesting and important "Seventh Research Report" which we received last month, and which was presented by Dr. Houston to his board in December last.

Fifth Annual Report.

In the fifth annual report a most admirable summary of the chemical and bacteriological analyses made during the year is given, and these are clearly and explicitly tabulated, so that it is easy to trace throughout the year the analytical history of the various kinds of water which go to make up the metropolitan water-supply. The analyses comprise routine examinations, not only of the filtered water as supplied to the consumer, but also samples of water made at various stages of the purification process—for example, raw river water and stored water previous to its filtration. The valuable record of analytical results throughout the year gives Dr. Houston the necessary material for forming a number of most important conclusions, all of which bear on the vital question of the safety of the metropolitan water for drinking purposes. A wise caution is given against the danger of trusting to the satisfactory "health prosperity" of London as regards the death-rate of diseases which might be water-borne, such as enteric fever. During the last 30 to 40 years the enteric fever death-rate for London has happily been low, but, as Dr. Houston points out, it is always dangerous to prophesy future security from past and present immunity.

In this report, as in previous reports, it is strongly emphasised that sand filtration is a process which reduces the number of bacteria in the water by 98 to 99 per cent., but which, nevertheless, does not exert any selective action on the organisms removed. Hence sand filtration alone would be a quite inadequate security against the possibility of a pathogenic infection of the filtered water.

Dr. Houston calls attention to the assumed innocuous character of the raw river water, and states that the results of a most prolonged and searching investigation have shown that the typhoid bacillus and Gaertner's bacillus can practically never be isolated from the raw river water despite the use of methods of practical utility. It is, however, properly and wisely stated that the Thames and Lea waters should always be regarded as potentially dangerous sources of supply since they are both admittedly sewage-polluted rivers. About 80 per cent. of the London water-supply is derived from sewage-polluted rivers, and it is pointed out that the judicious selection of raw water for waterworks purposes becomes an increasingly difficult operation, as the consumption of water progressively increases, while the volume of river water available remains constant.

Importance of Adequate Storage.

Throughout this annual report Dr. Houston is continually emphasising the importance of adequate storage of water previous to filtration. He is a most firm believer in the supreme importance of this part of the purifying process, and every report, whether it is an annual report or a special research report, always serves to strengthen the position which he has taken up from the first as regards the vital importance of adequate storage of the London water. In bringing out the formerly unrecognised importance of pre-filtration storage of water Dr. Houston has done most valuable pioneer work which will form the basis of all future methods of water purification, not only in London but throughout the world. Dr. Houston says: "Storage is Nature's method of sterilisation without the addition of any sterilising agent to the water." It is pointed out that storage acts in three ways—viz., by "sedimentation" it removes a large percentage of bacteria and harmful matter; by "devitalisation" the process of storage for four weeks kills pathogenic microbes; by "equalisation"—i.e., the mixing of large quantities of water is a safeguard in that the possible introduction of any infected water causes this to be so diluted that the dose is minimised to such an extent that it would probably be harmless.

In discussing filtration it is wisely advised that no water from a filter bed should be run into the service reservoirs until a satisfactory skin has been formed on the surface of the sand; until this is the case the water from the bed should be run to waste. Dr. Houston advocates the choice of an initially pure water-supply and emphasises the importance of safeguarding as far as possible the raw river waters from undue contamination.

In this report it is interesting to note that for the first time it is suggested that occasionally owing to meteorological conditions when the raw river water is exceptionally impure it may be desirable to consider the feasibility of a supplementary process of purification. The details of this new method are outlined in the subsequent seventh research report which Dr. Houston has since published and which is considered below.

Seventh Research Report.

Dr. Houston is to be congratulated on the valuable scientific work which he has accomplished by the issue of this report. Every part of the work is of great practical importance, and the whole undoubtedly paves the way for the adoption of some new and original processes in the method of purification of the metropolitan water-supply.

The first part of the report deals with the search for pathogenic microbes in the raw river water. The analysis of 215 raw river water samples resulted, after very careful search, in the finding of only two typhoid-like microbes, while a similar examination of 59 samples showed the presence of only one Gaertner-like microbe. The methods employed in the examinations have been carefully tested by the examination of artificially infected samples of water, and the practical utility of the methods can be relied upon.

The second part of the report deals with the comparative vitality of uncultivated and cultivated typhoid bacilli in raw river water. In this part of the report the striking result has been established that uncultivated typhoid bacilli die in river water much more rapidly than the cultivated microbes.

In the case of uncultivated microbes the majority die after storage for one week, and a period of three weeks is sufficient to kill all. In the case of cultivated microbes the period of life in stored water may be over five weeks.

The third part of the report discusses the important question of the effect of temperature on the vitality of the typhoid bacilli in raw river water. It has been found that the effect of low temperature is considerably to increase the period of vitality of the typhoid bacillus. It has been shown that two weeks' storage at 64·4° F. is equivalent to three weeks at 50°, four weeks at 41°, or five weeks at 32°. Dr. Houston points out that the critical months as regards temperature are December, January, and February, and that these are the months when specially large volumes of water are usually taken into the storage reservoirs, and he adds that the rules governing the abstraction of river water appear to be undesirably lax, and emphasises the importance of the Board exercising vigilant control over the quality of water taken into the storage reservoirs.

The fourth part of the report deals with the characters of B. coli in river water, stored water, and filtered water. In this investigation special attention is paid to the cultural characteristics of the B. coli organisms when grown on different media, and a differential classification of the varieties of the coli organisms is obtained.

The fifth part of the report has also marked practical bearing. It deals with the advantage of passing raw river water through small reservoirs antecedent to storage in large reservoirs. Bacteriological and chemical analyses have been made which prove conclusively the value of this proceeding. Dr. Houston points out that the working cost of these small reservoirs would be practically *nil*, and that they have an advantage which large storage reservoirs do not possess, in that they can be cleaned out periodically. The small reservoirs would serve the function of trapping a considerable proportion of the suspended matter and bacteria, and so preventing the entry of undesirable material into the large storage reservoirs. Dr. Houston states that the good effect of preliminary settlement may be greatly enhanced by the use of chemical coagulants.

The sixth, and final, part of the report deals with the advantage of occasionally using precipitation methods antecedent to storage. Dr. Houston rightly points out that there is a natural aversion to the use of chemicals for purification purposes. He only advocates the use of this additional method of purification at the time when the raw river water is exceptionally bad. A table of analyses shows that with the alumino-ferric process the addition of chemicals in amount 16 parts per 100,000 will cause an average sample of raw Thames water at the worst period of the year to become better than an average sample of raw Thames water at the best period of the year. The use of this additional method of purification would seem to be desirable in the months of December, January, and February, when the raw Thames water is often in a very undesirably impure state.

MEDICINE AND THE LAW.

A "Dental Institute" and its Patient.

A CASE recently tried by His Honour Judge Cluer at the Clerkenwell county court should serve as a warning to persons inclined to allow themselves to be treated by unqualified persons practising dentistry. The action was for personal injuries and for the detention of a set of false teeth, the plaintiff, Thomas Wheeler, a timber merchant, suing W. H. Hawkins, trading in Gray's Inn-road as "The Williams Dental Institute." Mr. Wheeler had arranged with the "Institute" that he should be supplied with a set of upper teeth for the sum of £2, of which 10*s.* were paid at the time the contract was entered into, followed by weekly instalments of 2*s.* After the teeth had been delivered they were found to be uncomfortable, and one of them broke, so that the plaintiff had to return to the defendant's establishment. While he was there, and while the teeth were in his mouth, payment of a sum of 10*s.* was requested of him, and there seems to have been some dispute at the county court as to whether this was an extra claim in respect of replacing the broken tooth, or whether it was merely for payment of the balance due. The plaintiff contended that he was asked to pay in respect of the broken tooth and that the defendant's assistant had agreed to replace this free of charge. In any case, he refused to part with the 10*s.* asked for or to give up the teeth, which were thereupon demanded, and upon this refusal two of the assistants employed at the institute seized him, twisted his arm, threw him to the ground, and forcibly extracted the false teeth from his mouth. Medical evidence to the effect that after the struggle the plaintiff was found to be suffering from shock and bruises corroborated his version of what had occurred, and after evidence for the defence denying the alleged violence had been given, his Honour Judge Cluer found for the plaintiff, awarding him £10 as damages with costs.

A Judge and Medical Evidence.

At the same court, in sending a case under the Workman's Compensation Act to a medical referee for his report as to the condition of the workman, the judge referred recently to the medical evidence on the subject in terms not altogether just to the medical profession. According to the report before us he said "we have to put much confidence in doctors; but the fact that they come into a court to give evidence on either side is not creditable to the members of the profession. They cannot be giving their evidence honestly. They will come and say anything because they think we are fools." Any such general and sweeping condemnation of medical witnesses based upon differences of opinion expressed by them in the witness-box is manifestly unfair, if any reflection is bestowed upon the subject, and if the circumstances in which contradictory medical evidence is given are taken into consideration. Probably there is a limited number of medical men who endeavour to make a profit by helping to exploit the claims of persons who seek compensation in courts of law, but the number is very small. In cases where these give evidence in support of demands for damages not justified by the facts strong and emphatic contradictions of testimony are likely to take place. Putting aside, however, the consideration of claims of a more or less fraudulent nature, supported by professional witnesses of questionable character, a combination which is quite rare, we find that perfectly genuine differences of opinion must necessarily occur in many of the cases which come before the courts for the assessment of compensation claimed by workmen and others for physical injuries. But too much stress must not be laid upon these differences, for in many other cases no divergencies of view are held, but the cases where no difference of opinion occurs are not likely to be publicly heard of. It is only when the opinions on the two sides differ that they are publicly proclaimed by being expressed in the witness-box before a layman who naturally finds them perplexing. The judge who forgets these things in his public censure of an honourable profession also forgets apparently the numerous occasions upon which in the exercise of his own profession he has taken a diametrically opposite view from that of learned friends.

The Identity of the Sardine.

After hearing evidence at considerable length Alderman Sir George Woodman, sitting at the Guildhall police court, recently gave his decision in a case of some interest in connexion with our food supply. The defendant sold under the title "Skipper Sardines" Norwegian brislings, *clupea sprattus*. The prosecutors, being French preservers and importers of sardines, contended that only the sardine imported under that name from France since 1822 was entitled to bear the name, this fish being the immature pilchard, *clupea pilchardus*. They denied the contention of the defendant, that he was entitled to apply the name sardine to any small fish prepared in the way associated with that term. The alderman, after hearing a considerable amount of evidence, decided that the prosecutors were right in their contention as to what constitutes a sardine and that a false trade description had in fact been used. He also held that the defendant had failed to prove that before the passing of the Merchandise Marks Act in 1887 the description sardine had been generally applied to small fish packed in oil. He was, however, satisfied that for 20 years at least "sardine" had been a term used in commerce, especially by small retail traders, for any small fish so prepared, without regard to its precise identity. He found that the defendant started his business in 1903, when "sardine" had had its meaning thus extended, and when the Norwegian Government had adopted the term and applied it to brislings. He, the alderman, was of the opinion, after

reviewing these facts, that the defendant had proved that he had acted innocently, as provided for by the Merchandise Marks Act, and that he was entitled accordingly to have the summons dismissed. The case will serve as an authentic record of the history of the "sardine" as an article of diet, and need not deter anyone from partaking of the brisling through any idea that it does not constitute a nourishing article of diet. It will also have reminded many of a once familiar line in one of the late J. L. Toole's most popular parts, which summed up the case against the brisling with curious accuracy.

CENTRAL MIDWIVES BOARD.

A MEETING of the Central Midwives Board was held on April 18th at Caxton House, Westminster, Sir FRANCIS H. CHAMPNEYS being in the chair.

A letter was considered from the clerk of the Derbyshire county council submitting for the approval of the Board two rules drawn up and adopted by the local supervising authority with regard to (*a*) the laying out of the dead, and (*b*) the quarantine to be observed by midwives after nursing cases of infectious disease. The Board directed that the Derbyshire county council be thanked for its communication. The matter is within its discretion according to the rules. Letters were considered from a registered medical practitioner complaining of the conduct of a certified midwife in advertising and prescribing. The report of the county medical officer thereon was also considered. The Board decided that the local supervising authority be asked whether it finds a *primâ facie* case against the midwife. Letters were considered from a certified midwife approved by the Board for the purpose of supervising the practical work of pupils as to the period of time during which her pupils are resident with her. The Board directed: (*a*) That the midwife be informed that the Board's intention is that the cases should be taken, so far as possible, and the training proceeded with, throughout the period of not less than the three months specified for instruction in the present rules, and that neither the cases nor the instruction should be crowded into a small portion of that period. (*b*) That all persons approved for signing Forms III. and IV. be asked how far they comply with the above. Letters were considered from a certified midwife approved by the Board for the purpose of supervising the practical work of pupils asking the Board's opinion as to certain suggested irregularities in the system of lecturing adopted by a recognised teacher. Letters were also considered from two candidates for the examination of April 29th as to the signing of their schedules by the recognised teacher whose lectures they have been attending, although the course of lectures had not been completed at the time of signing. The Board considered a complaint by a pupil of an approved midwife as to the failure of the latter to provide for her pupils a course of lectures in accordance with the rules. The Board decided: (*a*) That a copy of the letter of the approved midwife be forwarded to the recognised teacher, and that he be asked for an explanation. (*b*) That Nurse A. E. Monica Field and Nurse Olive Walters be allowed to enter for the examination of the Central Midwives Board of April 29th on proof being furnished that they have attended a complete course of lectures. (*c*) That a copy of the statement of the pupil be furnished to the midwife and that she be asked for an explanation. Letters were considered from the lady superintendent of a convalescent home inquiring as to the possibility of taking her training for the examination of the Central Midwives Board in two periods of two months each in two successive years. The Board directed that the reply be that the Board regrets that it is unable to encourage this application, especially as it appears that the applicant may be unsuitable for attending confinements. (See Rule E, 5.)

DEVON AND EXETER HOSPITAL.—A handsome tablet has been placed in the chapel of the Royal Devon and Exeter Hospital to the memory of Mrs. Jane Johnson, who was for 27 years "the devoted nurse of No. 2 Halford Ward." The memorial, which is composed of Derbyshire alabaster and Castelline marble, is the gift of Mr. Harry Hems, the well-known sculptor, who has been a member of the committee of management of the hospital for nearly 40 years.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN the 95 largest English towns having an estimated population of 17,639,816 persons in the middle of this year, 9363 births and 4893 deaths were registered during the week ending April 20th. The annual rate of mortality in the large towns, which had been 14·6, 14·0, and 14·0 per 1000 in the three preceding weeks, rose to 14·5 per 1000 in the week under notice. During the first three weeks of the current quarter the mean annual death-rate in the 95 large towns averaged 14·2 per 1000, and was 0·6 per 1000 in excess of the average death-rate recorded in London during the same period. The annual death-rates in the several towns last week ranged from 5·5 in Wimbledon, 6·4 in Ealing, 6·8 in East Ham, 7·1 in Bournemouth, and 7·5 in Croydon, to 19·1 in Blackburn and in Halifax, 19·2 in Rochdale, 20·0 in Reading, 21·1 in Wakefield, and 24·9 in Oldham.

The 4893 deaths from all causes in the 95 towns were 149 in excess of the number in the previous week, and included 424 which were referred to the principal epidemic diseases, against 434 and 386 in the two preceding weeks. Of these 424 deaths from the principal epidemic diseases, 164 resulted from measles, 149 from whooping-cough, 40 from infantile diarrhœal diseases, 31 from diphtheria, 22 from scarlet fever, 17 from enteric fever, and 1 from small-pox. The mean annual death-rate from these diseases last week was equal to 1·3 per 1000, against 1·3 and 1·1 in the two preceding weeks. The deaths attributed to measles, which had been 119, 131, and 121 in the three preceding weeks, rose to 164 last week, and caused the highest annual death-rates of 1·5 in Manchester, 1·8 in Newport (Mon.), 1·9 in Oxford, 2·1 in Warrington, 2·2 in Nottingham, 2·5 in Rotherham, 3·4 in Salford, and 5·1 in Cardiff. The deaths referred to whooping-cough, which had been 147, 162, and 146 in the three preceding weeks, were 149 last week; the highest annual death-rates from this disease were 1·2 in Walthamstow, in Wigan, and in Manchester, 1·4 in Bolton and in South Shields, 1·9 in Ilford, 2·0 in Salford and in Barnsley, and 2·1 in Ipswich. The fatal cases of diarrhœa among infants under 2 years of age, which had declined from 69 to 50 in the four preceding weeks, further fell to 40 last week, and included 9 in London, 4 in Birmingham, 4 in Liverpool, and 3 in Leeds. The deaths referred to diphtheria, which had decreased from 56 to 39 in the three preceding weeks, further declined to 31 last week; 9 deaths were registered in London, 3 in Manchester, and 2 each in Portsmouth, Leicester, Liverpool, and Barrow-in-Furness. The deaths attributed to scarlet fever, which had been 17, 24, and 16 in the three preceding weeks, rose to 22 last week; 4 deaths were recorded in London, 3 in Birmingham, and 2 each in Liverpool, Barnsley, and Swansea. The fatal cases of enteric fever, which had been 12, 17, and 13 in the three preceding weeks, rose to 17 last week, and included 2 in Nottingham, 2 in Leeds, and 2 in Cardiff. The death from small-pox occurred in Manchester.

The number of scarlet fever patients under treatment in the Metropolitan Asylums and in the London Fever Hospital, which had decreased from 1384 to 1242 in the five preceding weeks, had further declined to 1235 on Saturday last; 142 new cases of this disease were admitted to these institutions during the week, against 133, 121, and 119 in the three preceding weeks. These hospitals also contained on Saturday last 958 cases of diphtheria, 604 of whooping-cough, 283 of measles, 46 of enteric fever, and 1 of small-pox. The 1239 deaths from all causes recorded in London were 67 in excess of the number in the previous week, and were equal to an annual death-rate of 14·3 per 1000. The deaths referred to diseases of the respiratory system, which had been 191, 236, and 227 in the three preceding weeks, rose to 245 last week, but were 77 below the number in the corresponding week of last year.

Of the 4893 deaths from all causes in the 95 towns, 165 resulted from different forms of violence and 400 were the subject of coroners' inquests. The causes of 43, or 0·9 per cent., of the deaths registered last week were not certified either by a registered medical practitioner or by a coroner after inquest. All the causes of death were duly certified in Leeds, Bristol, West Ham, Bradford, Hull, Newcastle-on-Tyne, Nottingham, Salford, and in 65 other smaller towns. The 43 uncertified causes of death included 11 in Birmingham,

4 in Liverpool, 3 in West Bromwich, 3 in Southport, and 3 in Gateshead.

HEALTH OF SCOTCH TOWNS.

In the 18 largest Scotch towns, with an aggregate population estimated at 2,182,400 persons in the middle of this year, 1259 births and 675 deaths were registered during the week ending April 20th. The annual rate of mortality in these towns, which had been 16·1 and 16·6 per 1000 in the two preceding weeks, declined to 16·1 per 1000 in the week under notice. During the first three weeks of the current year the annual rate of mortality in these towns averaged 16·3 per 1000, and was 2·1 per 1000 in excess of the rate recorded during the same period in the 95 large English towns. The annual death-rates last week in the several Scotch towns ranged from 9·3 in Hamilton, 9·8 in Govan, and 10·3 in Clydebank, to 19·5 in Kilmarnock, 21·7 in Perth, and 23·2 in Leith.

The 675 deaths from all causes were 18 fewer than the number in the previous week, and included 74 which were referred to the principal epidemic diseases, against 72 and 82 in the two preceding weeks. Of these 74 deaths, 41 resulted from measles, 18 from whooping-cough, 8 from diphtheria, 4 from scarlet fever, and 3 from infantile diarrhœal diseases, but not one from enteric fever or from small-pox. These 74 deaths from the principal epidemic diseases were equal to an annual death-rate of 1·8 per 1000, or 0·5 per 1000 above that recorded in the 95 large English towns. The deaths attributed to measles, which had been 48, 42, and 49 in the three preceding weeks, declined to 41 last week, and included 11 in Glasgow, 10 in Edinburgh, 5 in Dundee, 5 in Leith, and 3 in Paisley. The deaths referred to whooping-cough, which had averaged 11 in the three preceding weeks, rose to 18 last week; 5 deaths were recorded in Glasgow and 3 in Coatbridge. The fatal cases of diphtheria, which had been 3, 2, and 9 in the three previous weeks, were 8 last week, and included 3 in Glasgow and 3 in Dundee. The deaths attributed to scarlet fever, which had declined from 7 to 3 in the three preceding weeks, were 4 last week, and comprised 2 in Glasgow, 1 in Dundee, and 1 in Partick. The deaths of infants under two years of age referred to diarrhœal diseases which had decreased from 16 to 7 in the four preceding weeks, further declined to 3 last week.

The deaths attributed to diseases of the respiratory system, which had declined from 123 to 103 in the three preceding weeks, numbered 106 last week, and 19 deaths resulted from different forms of violence.

HEALTH OF IRISH TOWNS.

In the 22 town districts of Ireland, having an estimated population of 1,157,014 persons in the middle of this year, 716 births and 518 deaths were registered during the week ending April 20th. The annual rate of mortality in these towns, which had been 20·9 and 21·0 per 1000 in the two preceding weeks, further rose to 23·3 per 1000 in the week under notice. During the first three weeks of the current quarter the mean annual death-rate in these Irish towns averaged 21·7 per 1000; in the 95 large English towns the mean annual death-rate did not exceed 14·2, while in the 18 Scotch towns it was equal to 16·3 per 1000. The annual death-rates in the several Irish towns last week were equal to 26·7 in Dublin (against 14·3 in London), 22·9 in Belfast, 23·8 in Cork, 26·8 in Londonderry, 14·9 in Limerick, and 17·1 in Waterford, while in the 16 smallest of these towns the mean annual death-rate was equal to 18·4 per 1000.

The 518 deaths from all causes in the 22 Irish towns were 52 in excess of the number in the previous week, and included 42 which were referred to the principal epidemic diseases, against 46 and 40 in the two preceding weeks; of these 42 deaths, 13 resulted from measles, 10 from diarrhœal diseases, 7 from whooping-cough, 6 from diphtheria, 4 from scarlet fever, and 2 from enteric fever, but not one from small-pox. These 42 deaths from the principal epidemic diseases were equal to an annual death-rate of 1·9 per 1000; the death-rate from these diseases last week did not exceed 1·3 per 1000 in the 95 large English towns, while in the 18 Scotch towns it was equal to 1·8 per 1000. The deaths attributed to measles, which had increased from 6 to 14 in the four preceding weeks, were 13 last week, and were all registered in Dublin. The deaths referred to diarrhœal diseases, which had been 7, 6, and 11 in the three preceding weeks, were 10 last week, and included 9 of infants under two years of age; 3 deaths were recorded in Belfast and 2 in Londonderry. The fatal cases of whooping-cough, which had been 16, 17, and 12 in the three previous weeks, declined to 7 last week, and included 4 in Belfast, and 2 in Dublin. The deaths attributed to diphtheria, which had been 6, 7, and 1 in the three preceding weeks, rose to 6 last week, of which number 4 occurred in Dublin. The 4 deaths from scarlet fever were 2 in excess of the average in the two preceding weeks, and comprised 2 in Dublin and 2 in Belfast. The 2 fatal cases of enteric fever were recorded in Dublin and Dundalk respectively.

The deaths referred to diseases of the respiratory system, which had been 134 and 135 in the two preceding weeks, declined to 118 in the week under notice. Of the 518 deaths from all causes in the 22 Irish towns 184, or 36 per cent., occurred in public institutions, and 7 resulted from different forms of violence. The causes of 22, or 4·2 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest; in the 95 large English towns the proportion of uncertified causes of death last week did not exceed 0·9 per cent.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE undermentioned Acting-Surgeons have been confirmed in the rank of Surgeon in His Majesty's Fleet:—Henry Edwin Scargill and Thomas Cock (dated May 19th, 1911).

The following appointments have been notified:—Fleet-Surgeon A. S. G. Bell to the *Black Prince*, on recommissioning. Staff-Surgeons: T. W. Jeffery to the *Black Prince*; W. K. D. Breton to the *Victory*, additional, for disposal, and for R.N. Barracks; J. G. Peebles to Plymouth Hospital; W. Bastian to the *President*, additional, for R.N. Hospital, Yarmouth; C. T. Baxter to the *Vulcan*; and A. K. Smith-Shand to Haslar Hospital. Surgeon: J. Bourdas to the *Adamant*, on commissioning.

ROYAL ARMY MEDICAL CORPS.

Captain Hugh E. Gotelee resigns his commission (dated April 24th, 1912).

Surgeon-General J. G. MacNeece, C.B., has taken up duty at Salisbury as Deputy Director of Medical Services, Southern Command, in succession to Surgeon-General H. R. Whitehead, C.B., transferred. Lieutenant-Colonel F. H. M. Burton has been placed under orders for service abroad during the coming trooping season. Lieutenant-Colonel A. P. Blenkinsop has arrived in India for a tour of duty. Lieutenant-Colonel S. Glenn Allen, holding charge of the Military Hospital at Gibraltar, has been selected for the increased rate of pay under Article 317 of the Royal Warrant. Lieutenant-Colonel B. M. Skinner, M.V.O., has arrived home for duty from India. Lieutenant-Colonel A. A. Sutton, D.S.O., senior medical officer, Sierra Leone, has arrived home on leave of absence from West Africa. Lieutenant-Colonel M. T. Yarr has been transferred from the Scottish Command to the London district.

Major H. A. Berryman has been transferred from Chester to the Military Hospital at Bury for duty. Major J. P. Silver has been appointed to the Dublin district. Major A. J. MacDougall has been posted to the Belfast district. Major C. W. Reilly has arrived home from India. Major J. H. E. Austin has been transferred from the London district to the Scottish Command. Major W. B. Fry has been selected for appointment as Clinical Pathologist at the Royal Herbert Hospital, Woolwich. Major R. J. W. Mawhinny has been placed under orders for service abroad during the coming trooping season. Major E. C. Anderson, D.S.O., has been selected for appointment as Medical Officer in charge at Golden Hill Fort. Major A. A. Seeds has been appointed to the Northern Army in India for duty with the Third (Lahore) Division. Major H. S. Taylor has been transferred from the Straits Settlements to the home establishment for duty at Fort George.

Captain R. G. Meredith has been transferred from Sheffield to Pontefract. Captain J. L. Jones has been appointed for duty with the Northern Army in India and posted to the

Seventh (Meerut) Division. Captain D. de C. O'Grady has been selected for appointment as Specialist in Dermatology and Venereal Diseases to the Second (Rawal Pindi) Division. Captain V. C. Honeybourne has been transferred from the Fifth (Mhow) Division to the Aden Brigade for duty at the Station Hospital. Captain C. B. Browne has been granted six months' general leave of absence home from India. Captain W. J. Weston has been posted to the Irish Command for duty in the Cork district. Captain G. Baillie has left the London district for service on the West Coast of Africa. Captain E. D. Caddell has been transferred from the Third (Lahore) Division to the Fourth (Quetta) Division. Captain T. B. Unwin has arrived home for duty from Sierra Leone. Captain W. S. Crosthwait and Captain E. Ryan have been placed under orders for service abroad during the coming trooping season. Captain W. Egan has arrived home on leave of absence from Mandalay. Captain C. R. Millar has taken up duty in the London district. Captain W. MacD. MacDowall has been transferred from the Aldershot Command to the London district. Captain L. A. A. Andrews has arrived home for duty from Mauritius. Captain D. F. Mackenzie has been granted eight months' general leave of absence. Captain T. Scatchard has arrived home from India on completion of a tour of foreign service. Captain M. Keane has joined the Military Hospital at Colchester for duty. Captain A. L. Stevenson has been transferred from Nowshera to the Station Hospital at Peshawar.

Lieutenant R. F. Bridges has been appointed to the Military Hospital at Shorncliffe. Lieutenant T. J. Hallinan has been transferred from Limerick to the Dublin district. Lieutenant W. A. Frost has taken up duty at Alderney. Lieutenant E. S. Calthorp and Lieutenant H. S. Blackmore have been appointed to the London district. Lieutenant F. S. Tamplin has joined the Royal Victoria Hospital, Netley, for duty.

INDIAN MEDICAL SERVICE.

Lieutenant-Colonel K. Prasad has arrived home on leave of absence from India. Lieutenant-Colonel R. J. Marks, civil surgeon of Gorakhpur, has been granted leave of absence for six months. Lieutenant Colonel H. Fooks has assumed duty as officiating Principal Medical Officer of the Aden Brigade during the absence on leave of Brevet-Colonel H. F. Cleveland. Lieutenant-Colonel W. Vost has been transferred from Lucknow to Fyzabad as Civil Surgeon.

Major E. J. Morgan, civil surgeon of Sitapur, has been granted leave of absence home from India for six months. Major W. MacM. Pearson has been transferred from Budaun to Mirzapur as Civil Surgeon. Major J. N. Walker has been transferred from Rae Bareli to Gorakhpur as Civil Surgeon, in succession to Lieutenant-Colonel R. J. Marks. Major W. S. Willmore, civil surgeon of Mirzapur, has been granted privilege leave, combined with study leave and furlough, for a total period of 21 months. Major C. R. Pearce has been appointed to hold collateral charge of the Civil Surgeoncy at Maymyo, in place of Lieutenant-Colonel A. O. Evans, whose services have been placed at the disposal of the Home Department of the Government of India. Major T. H. Foulkes, Madras Presidency, has been granted one month's extension of leave. Major S. A. Harris, on return from deputation in Burma, has taken up duty as Deputy Sanitary Commissioner of the First Circle, United Provinces of Agra and Oudh.

Captain H. W. Illius has been selected to officiate as Civil Surgeon at Sitapur, vice Major E. J. Morgan. Captain W. Tarr, civil surgeon at Nimar, has been deputed on special duty at Pachmarhi. Captain H. Watts has been appointed Civil Surgeon at Wardha, vice Captain M. F. Reaney, transferred to Akola. Captain T. C. Rutherfoord, civil surgeon at Bilaspur, has been placed on special duty at Amritsar to undergo a course of instruction in malariology. Captain R. Knowles, senior medical officer at Jhansi, has taken up civil medical charge of the district in addition to his military duties, vice Captain H. W. Illius, transferred. Privilege leave for three months, in combination with leave on medical certificate for nine months, has been granted to Captain G. Fowler, civil surgeon of Akola. Captain S. H. Lee Abbott has been appointed Civil Surgeon at Ferozopore. Captain J. E. Clements has taken up duty as Officiating Superintendent of the Central Jail at Fategarh during the absence on leave of Lieutenant-Colonel E. Jennings. Captain A. Murphy has been appointed to act as Civil Surgeon at Ahmednagar.

Captain C. E. Bulteel has been granted an extension of leave for a further six months on the recommendation of a medical board. Captain C. A. Gill, Deputy Sanitary Commissioner of the Punjab Province, has been granted 18 months' leave of absence home from India. The services of Captain J. K. S. Fleming have been placed at the disposal of H.E. the Commander-in-Chief by the Government of India.

Lieutenant M. A. Rahman has been selected for appointment as Specialist in Otology and Laryngology. Lieutenant P. B. Bharucha has taken up duty as Specialist in Advanced Operative Surgery to the Second (Rawal Pindi) Division.

TERRITORIAL FORCE.

Army Medical Service.

The undermentioned officers, on completion of four years' service as Assistant Directors of Medical Services of Territorial Divisions, retire, and are granted permission to retain their rank and to wear the prescribed uniform (dated April 1st, 1912):—Colonel Andrew Clark and Colonel William P. Whitcombe.

Royal Army Medical Corps.

Attached to Units other than Medical Units.—Lieutenant Charles H. Bullen to be Captain (dated Jan. 24th, 1912).

DEATHS IN THE SERVICES.

Colonel Alexander William Duke, late R.A.M.C., on April 21st. He received his first commission in the army in 1868, attained the rank of Colonel in 1898, and retired in 1905. He served in the South African War 1899–1900, and was in command of a general hospital, and principal medical officer of a portion of the lines of communication. He took part in the operations in Cape Colony, in the Orange River Colony, and in the Transvaal (Queen's medal with three clasps).

THE COURSE OF INSTRUCTION FOR ACTING SURGEONS AT THE R.N. HOSPITAL, HASLAR.

The course for Acting Surgeons, R.N., terminated at Haslar on April 16th, when Sir James Porter, K.C.B., Director-General of the Medical Department of the Navy, gave away the prizes and delivered a short address to the newly entered surgeons. He congratulated them on their diligence and on the good work they had done at Haslar.

The gold medal and Admiralty prize (a surgical dressing case) were gained by Acting Surgeon M. M. Melrose, formerly of Manchester University and Middlesex Hospital, who gained the highest aggregate marks in the London and Haslar examinations. The silver medal and Admiralty prize were won by Acting Surgeon C. H. Symons, formerly of Charing Cross Hospital, who takes the second place, and Acting Surgeon G. D. Macintosh was awarded the third Admiralty prize for being first in the analysis group of subjects taught at Haslar. As this officer entered as a colonial candidate and elected to sit for qualification only and not for competition at the London examination, he is assigned, in accordance with the regulations, the last place in the seniority list.

The order of seniority, as determined by the sum of the marks obtained by each acting surgeon at the London and Haslar examinations, is as follows:—

	(Maximum Marks 4800)		(Maximum Marks 4800)
Melrose, Malcolm M. ...	3661	Goodwin, Ernest St. G. S. G.	3268
Symons, Cecil H.	3491	Fergusson, George D. G. ...	3263
Clark, Alfred B.	3455	Barlee, Ronald J.	3180
Cockrem, Guy B.	3355	Macintosh, George D. (Colonial Candidate) ...	—
Hull, Herbert R. B.	3313		
Thatcher, Charles M. R. ...	3312		

These officers have since been confirmed in the rank of surgeon (dated Nov. 24th, 1911).

THE CHILD-STUDY SOCIETY.—The annual conference of this society, which includes the constituent societies at Birmingham, Cheltenham, Dundee, Edinburgh, Exeter, Halifax, London, Liverpool, Manchester, and Tunbridge Wells, will be held at the University of London on Thursday, Friday, and Saturday, May 9th, 10th, and 11th. Sir James Crichton-Browne will preside, and the subject for discussion will be "The Health of the Child in Relation to its Mental and Physical Development." Dr. T. B. Hyslop, Mr. P. Macleod Yearsley, Mr. N. Bishop Harman, Dr. F. W. Edridge Green, Dr. Jane Walker, Dr. G. Eric Pritchard, and prominent laymen and women will take part in the discussion.

Correspondence.

"Audi alteram partem."

HOSPITALS AND HOSPITAL FUNDS.

To the Editor of THE LANCET.

SIR,—I am sure that not only the governors of St. George's Hospital but many of the governors of other hospitals, as well as members of our profession anxious for the advancement of the latest developments of scientific medicine, will have read with great satisfaction the article in this week's LANCET entitled "Hospitals and Hospital Funds."

Anything which retards or penalises the progress and satisfactory utilisation of valuable new methods of diagnosis and treatment is surely greatly to be regretted; yet this is what the action of the committee of the King's Fund would be responsible for at St. George's Hospital were its demands complied with. For although the first criticism of the committee of the Fund was directed to the question whether any part of the funds of the hospital was expended upon medical education, when this had been disproved the complaint of the committee was that the expenditure upon the pathological and bacteriological departments was excessive, an entirely different question.

It will be seen (p. 1077) that the investigation to which the Lord Mayor was good enough to devote some of his much-occupied time led him to the conclusion that "the amount expended upon these departments is in no way excessive, and does not represent a larger cost per occupied bed than is the case at many other London hospitals"; that the work of these important departments is "essential to the scientific diagnosis and treatment of disease," and "involves most laborious processes which can only be efficiently carried out by skilled and highly trained officers with appropriate salaries."

The governors of St. George's Hospital, wishing to obtain for its patients the best possible assistance, succeeded in securing the services of men eminent in this direction, to whom they assigned what they believed to be absolutely reasonable remuneration. It was felt that the recent advances in serum-therapy necessitate for its efficient use a vast amount of laboratory work which requires to be done promptly by skilled workers; that this is largely replacing work and expenditure upon the dispensary and drugs; that the investigations undertaken and the material produced in the laboratories are as necessary for the treatment of the patients as the skilled production of proper drugs and the accurate dispensing of medicines; and that if such aids were not secured by the furnishing of the laboratories and the payment of a skilled staff, the patients of St. George's Hospital would be deprived of most important methods of cure.

An elaborately equipped electrical department was recently installed in the hospital for the investigation and treatment of disease, without which aid many serious diseases and injuries could not be diagnosed or treated. No criticism was made by the committee of the Fund as to this being provided and maintained out of the general funds of the hospital, although this is precisely comparable to the work of the bacteriological and pathological departments. Seeing, then, that the work of these departments is absolutely devoted to the benefit of the patients, it seemed to the treasurer and the governors only right that the cost should be paid out of the general funds of the hospital, and that otherwise the cost per bed would not be fairly represented.

Surely, Sir, it is more straightforward to include in this cost every item which properly belongs to it, than to exclude anything in order to represent an apparently smaller figure. The authorities of the hospital could not therefore agree that it would be right to ask the school to contribute, as required by the committee of the King's Fund, "the difference between the sum of £1000 and the charge borne by the hospital in respect of specific work done for the hospital patients, which amounted in 1909 to £1875." They invited the committee of the King's Fund to the fullest investigation, and some of us attended that committee with the object of explaining the reasons which obliged us to decline to comply with its demands, which demands we considered were not in accord with the recommendations of the Fry Commission. But no details have been furnished us indicative of the evidence upon which the judgment of the committee has been formed.

As one who has had half a century of active work in connexion with the hospital, and as an old member of the house and finance committees, I am, I think, justified in saying in the most decided manner that the sincerest efforts have invariably been made to act in complete accordance with the committee of the King's Fund, the value of whose work we thoroughly appreciate. I need hardly say that I credit the committee with the belief that their decision in this matter is an absolutely just one; but I cannot but think that a more complete investigation would have led them to the same decision as that which the evidence produced led the Lord Mayor to form and yourself to endorse.

I am, Sir, yours faithfully,

Athenæum Club, April 22nd, 1912. WARRINGTON HAWARD.

STATE INSURANCE IN GERMANY.

To the Editor of THE LANCET.

SIR,—Frankly, I regret the publication of an article like the one written by Mr. Richard Thirsk in the current number of *Chambers's Journal* on "State Insurance in Germany." It is, I think, unfair, and written without a practical knowledge of the subject; the errors it contains may convey a false impression of actual conditions.

To adequately illustrate the errors into which the author has fallen it would be necessary to review separately the three distinct branches of compulsory insurance in Germany; I shall therefore only deal with the more salient points of the article. It is true that the remuneration of club doctors in Germany is bad, and this is due to the absence of a fixed scale in the Acts themselves, a mistake repeated in the British Act. It must be remembered, however, that each German sick club is entirely self-governing, two-thirds of the boards of each club being elected by the insured and one-third by the employers. As it lies in the hands of the board to make arrangements with the doctors it follows that the selection of incompetent doctors would not be tolerated by the majority—the insured. Again, as about one-fifth of the total population is insured it is obvious that there are few doctors who can afford to dispense entirely with club work, which naturally must form a more or less important part of almost every doctor's *clientèle*. Usually each member selects for the coming year the doctor to treat him in case of illness from a list of club doctors, or he is allowed to change his medical attendant for each fresh case of sickness. A few hours spent in the office of a sick club would convince that the German insured person does not hesitate to claim his rights in full, and it is only the malingerers who have cause to complain of the strict supervision enforced in the interests of the club funds, as the avoidance of unnecessary expenditure means extra benefits to the members, in the shape of decrease in contributions or increase in the sick-pay allowance.

The "Insurance Commissioners" (?) and the "district doctor" mentioned by Mr. Thirsk have nothing to say about the consultation of specialists. The board of the club makes arrangements with a certain number of specialists, according to local requirements, and the decision to consult one of these rests solely with the board; in some cases, of course, on the recommendation of the club doctor. The specialists are paid according to the official tariff.

The statement that "insurance against accidents has long since been dismissed as a delusion" and that "it does not come into force until six weeks after the accident has happened" displays ignorance of the subject. The moment an accident occurs the sick club has to undertake the treatment, and after 29 days the sick-pay (which amounts to at least one-half of the insured person's salary) has to be increased so as to amount to at least two-thirds of his wage. The cost of accident insurance is borne solely by the employers; this branch of insurance costs the latter alone £3,112,471 annually, as compared with £4,000,000 spent in Great Britain under the Workmen's Compensation Act. It is true that the pensions paid in Germany do not admit of the recipient living in comfort or independence (old age £5 10*s.* to £11 10*s.*; invalidity pension £5 16*s.* to £22 10*s.*, not £2 to £10 as stated). But then it is his right to claim these, and they are free from the taint of charity. The British

Poor-law demands an expenditure of about £15,000,000 and old age pensions £9,000,000, to be met solely by the taxpayers.

That compulsory insurance is a charge on the cost of production nobody will deny, but then in spite of this Germany has within the past 27 years experienced an unprecedented increase in the national wealth and prosperity, while salaries have on an average increased by 47·6 per cent. between 1890 and 1909 (from £32 6*s.* to £47 13*s.*). Manufacturers do complain of the *fresh* burden of expenditure to be met in connexion with the extension of the scope of compulsory insurance at a time when competition has become exceptionally keen (raising the income for insurance against sickness from £100 to £125, and granting pensions to the dependents of deceased insured persons); these innovations are estimated to entail a fresh charge amounting to £6,300,000, while the new pension fund for clerks earning up to £250 will entail a cost of about £3,750,000 for the employers alone. The present State subsidy towards the cost of invalidity and old age pensions will be increased by £1,370,000; at present it amounts to £2,550,000.

In conclusion, it may be mentioned that France has "fallen into the mire" as well as Austria, Hungary, Switzerland, and Great Britain, and Russia is about to follow suit. Like everything human, National Insurance has its drawbacks, but it would be puerile to deny the great benefits it has brought in its train in Germany, although some of its regulations are vexatious, particularly to the ordinary householder, who is compelled to report his domestics as they enter or leave his service, and has to see that the contributions are duly paid.

I shall be happy to supply any of your readers with further particulars on the subject should they be specially interested in some point of German compulsory insurance.

I am, Sir, yours faithfully,

Darmstadt, April 18th, 1912. GEORGE P. FORRESTER, F.C.S.

THE BED ISOLATION OF CASES OF INFECTIOUS DISEASE.

To the Editor of THE LANCET.

SIR,—I am reluctant to trespass again upon your columns, but since Dr. Burton has replied with some acerbity to my simple remark that my work had not been very frankly acknowledged, I must beg leave to do so. It appears that, when in January, 1910, I read a paper based on some three years' work, Dr. Burton had just instituted the Fazakerley experiment. If questions of priority are to be raised, it would seem that my work and my paper—poor things, but mine own—anticipated Dr. Burton's. What Dr. Burton has done that I could not do is to convince Dr. Biernacki of the safety of bed isolation. I demonstrated it to my own satisfaction and that of my staff long ago. However, Dr. Burton is not quite fair to himself in saying that I "was unable to give any statistics ..... or to state definitely what diseases except diphtheria, typhoid fever, and erysipelas" I had been prepared to treat together. What I said was that I could not give "statistics of magnitude," but I showed that in three years we had treated over 200 cases successfully, without cross infection, and I gave a list of at least 12 diseases or combination of diseases that had been dealt with. It is true that I had not then *deliberately* placed scarlet fever by the side of diphtheria, but my hearers clearly understood that such cases had been treated side by side. I had not the advantage that Dr. Burton has had, of utilising a special isolation block, but I refrained from moving such cases of mistaken diagnosis as do frequently occur; and, in respect of certain diseases, was compelled, from reasons of accommodation, to treat them side by side with others. It is not the fact that I attach great importance to aerial dissemination. I certainly believe that such dissemination *may* occur, but I am also convinced that such dissemination may be easily prevented. It is very likely that Dr. Biernacki's lingering attachment to the cubicle system, under some conditions, would be dissipated if he tried my plan of throat treatment. But I also hold that throat spraying is beneficial therapeutically, as well as a means of preventing the infection of articles which may convey infection immediately. The collation of my remark that routine treatment with big glass syringes is dangerous, with the statement that each patient was provided with a spray or syringe, reveals no inconsistency. There was no need to burden an already overlong paper with a discussion on the relative value of sprays and syringes, or of the proportion in which we used them. This and the question of oily and watery solutions, was discussed in two other papers published during 1910. But I cannot hope that these ever penetrated into regions where THE LANCET and the Proceedings of the Royal Society of Medicine are unknown, or at least unread. The references to my desire to assume assistance and to obtain prominence do not require notice.

The broad issue of "Bed Isolation *v.* Cubicles, Barrier System Intervening" calls for a few words. If the walls or partitions in cubicles are of any practical utility it can only be because they offer a material hindrance to the dissemination of infection through the air. I do not myself believe that such dissemination occurs, except to a limited extent, in cases of scarlet fever, and am convinced that so far as it may occur, it can be controlled. Bed isolation is the inevitable consequence of having confidence in such knowledge as we profess of the way in which infection is spread, and the methods available for its control. It is therefore applicable to the prime infections, as well as the secondary ones. The barrier system, however, relies on separation of *diseases* in different wards or blocks, and is only applied in practice to selected cases.

I thought it my duty two years ago to record my experiences and conclusions, without expecting any immediate support. Others have doubtless worked and thought on the same lines; Dr. Nash amongst them. Still, so long as the principles are kept in mind it is of infinitely little importance whether at "Naishapur or Babylon" the details are worked out. And lest others besides Dr. Burton should think that I consider "prominence" still desirable, I will gladly refrain from further intervention in the discussion.

I am, Sir, yours faithfully,

Welbeck-street, W., April 20th, 1912. F. G. CROOKSHANK.

To the Editor of THE LANCET.

SIR,—I am much obliged to Dr. John Biernacki for replying to my letter, though I would like to remind him that I did not express any definite view as to the value of partitions in stopping infection. On the other hand, he expressed certainty on the point, but I do not think it can justly be said there is anything in his letter which proves his statement, however probable it may be. I did not ask for any theory and he does not give any statistics, though I have no doubt he could if he cared to do so. He points out that nurses are not selected for the cellular and barrier work; and from that he draws a conclusion to the effect that if different results are yielded, given similar methods and the same quality of nursing, the difference is to be attributed to one factor. This factor I take to be the partition.

Given a staff of varying efficiency, one or two cell wards, a greater number of wards where the barrier exists and no selection in the nursing staff, it is to be expected that the cell wards would give the best results for the reason that the least worthy of the nursing staff would spend a greater amount of time in the barrier than in the cell wards.

I am, Sir, yours faithfully,

FREDERIC THOMSON.

North Eastern Hospital, Tottenham, N., April 22nd, 1912.

PSYCHIATRY IN ENGLAND: ITS PRESENT STATE AND ITS OUTLOOK.

To the Editor of THE LANCET.

SIR,—In addition to the important aspects of the problems mentioned in the leading article of THE LANCET of April 6th on the present position of psychiatry in England, and in Dr. Bedford Pierce's letter of comment thereon, there is a cognate question of equal importance at the present juncture—viz., the unsatisfactory position of psychological research and applied psychology in England as compared with other countries. The statutory medical inspection of school children during the last four years has brought a large number of members of the medical profession into direct touch with the problem of the mentally deficient child and his psychology. The absence of any opportunities for definite preliminary training for this branch of the work stands in marked contrast to the ample facilities which exist for the acquisition of a knowledge of

sanitary science and school hygiene, and the school medical officer is left to grope in the dark in that domain of knowledge "where three empires meet"—i.e., those of the physician, the pedagogue, and the psychologist. The result is in the highest degree unsatisfactory, for while a certain number of the school population belong to categories of mental deficiency the recognition of which is easy, the assessment of the mentality of many other children is impossible without a considerable knowledge of applied psychology. This difficulty is further intensified by those borderland cases which so often ultimately find their way into the criminal courts and prisons as "defective delinquents." A much wider acquaintance with modern methods of psychology is highly desirable in the interests of the children themselves and the community at large. Moreover, the elucidation and analysis of the mental processes and equipment of the feeble-minded child present a problem which is as full of practical interest as, for example, the psycho-analysis of a case of dementia præcox, and requires the same type of concentrated and prolonged examination. The somewhat perfunctory attendances at lectures on psychiatry or at an asylum, which constitutes part of the curriculum for the degrees granted by certain universities, are of little practical utility from this point of view, and the meagre facilities for gaining experience and training which are to be found in England at the present time do not show up well by contrast with those which exist in other countries. In proof of this statement I need do no more than refer to the reports of the Committee on the Mental Factors involved in Education published yearly in the Proceedings of the British Association for the Advancement of Science, more especially the reports presented at the meetings in Winnipeg, Sheffield, and Portsmouth. The provision of clinical lectures and post-graduate courses in some of the institutions for the feeble-minded in America points a way to a similar use of the abundant material to be found in the special schools of our large towns and the residential institutions for this class of the mentally defective. For example, in the last report of the Waverley Colony for the Feeble-Minded, the medical superintendent, Dr. Fernald, states that 33 clinical lectures, with demonstrations, were given during 1911. They were attended by students and graduates of Harvard and other universities. It was my privilege to be present at two of these demonstrations, and I can testify to the great value of the teaching to those for whom they were designed. Facilities for training are obtainable at other similar institutions in the United States, as, for example, the Vineland Institution, New Jersey, the Juvenile Psychopathic Institution at Chicago, and the Psychological Clinic in Philadelphia. So far as I am aware, no medical school in England gives any systematised teaching in this branch of medicine. It is to be hoped that in the movement for the establishment of a Diploma in Psychological Medicine this aspect of the question will not be overlooked. I am, Sir, yours faithfully,

Birmingham, April 19th, 1912. GEORGE A. AUDEN.

To the Editor of THE LANCET.

SIR,—To expect psychiatry to advance in England to any extent under present conditions is to totally ignore the whole system under which we work. Even an asylum with a population of 2000 and upwards has only one medical officer recognised by law or the Commissioners in Lunacy. He is variously termed "The Manager," "The Superintendent," or "The Medical Officer." Often owing to his faulty and chaotic training he is forced to be "The Manager" to his brother physicians and "The Doctor" to the lay visitors. The many years of complete and abject subordination as assistant medical officer badly fit him to pose in either rôle. A temperament content to exist in two rooms for at least 10, and in some cases 20, years before attaining any particular position of responsibility is unlikely to be a great success in any serious professional work. That it does turn out excellent men of the lodging-house keeper type is, however, something to the credit of the system, and shining examples of such may be found all over the country. Restrictions such as compulsory celibacy, enforced detention for 24 hours daily within the asylum and grounds except by special request and leave, ordinary recreation often a subject of arrangement, the very diet at times indifferent and quite outside the assistant medical officer's control, the simplest expressions of opinion at times a subject of offence, perhaps even want of due and humble deference to the superintendent's wife a serious set-back to a man's prospects, these and many other drawbacks impoverish a service that has as good a right as any other to the best brains in the profession. I am, Sir, yours faithfully,

April 17th, 1912. A. M. O.

PYGMY CRANIA FROM EGYPT.

To the Editor of THE LANCET.

SIR,—In your note on Miss H. Dorothy Smith's paper on the above subject you write: "Presumably the author thinks the skulls are those of a pygmy race, for their comparison is made to the Akkas and Andamanese, and the paper leads the reader to suppose that a review is made of the crania of a pygmy race from Egypt. There is, however, a choice between 'infantile dwarfism' and 'ethnic dwarfism' which the author has not reckoned with."

Considering that the most complete account of dwarfism hitherto prepared was being issued at the same time from my laboratory, it would be surprising if the distinction had not been made by the author between infantilism and ethnic dwarfism. The following words, which have been apparently overlooked by your reviewer, occur on p. 266 of the article: "The several forms of dwarfism were quite familiar to the Egyptians, and the possibility that these are cases of dwarfism of the 'infantile type' is worthy of consideration. At the same time, the fairly perfect character of the teeth rather favours ethnic dwarfism."

Your writer's remark that "Egyptian skulls ranging from the third dynasty to Christian times have been examined, and among this wealth of material the author has found some few individuals who were undersized," is, I think, also liable to misinterpretation. The skulls examined were 1600 and *nine* were found to present noteworthy smallness. The 1600 crania are all from *one* period, the third dynasty. "In addition to the above," Miss Smith writes, "it has been possible through the kindness of Dr. Derry to procure measurements and photographs of two small specimens of other periods." These two other crania are only dealt with for purposes of comparison and do not mark a ransacking of Egyptian material from the third dynasty to Christian times.

The prevalence of dwarfism of all pathological types in modern Europe is certainly under 0·5 per cent., and in modern Europe ateleiosis and achondroplasia are, to say the least of it, as frequent as infantilism. Yet in the third dynasty we find 0·6 per cent. of these remarkable crania, and we have not so far come across identifiable achondroplasic skulls. I use the word "remarkable" advisedly because in the frequency distribution of the characters of our 1600 crania, these crania would, if included, form a lump at the tail, and this is contrary to our experience in many other long series when only adult crania are dealt with. "Infantilism" really seems for good reasons excluded, but Miss Smith spoke guardedly on the point. The works of Levi Kollmann and Ranke have made it plausible that in early Europe a pygmy race existed alongside a normal race, and they have suggested that individuals still to be found are descendants of it. It seems probable that the crania dealt with really belonged to a similar pygmy race, not negrillo, surviving in a few instances longside the normal Egyptians of the third dynasty. The crania do not appear in any way pathological, nor can we, I think, look upon them as extreme variants of a normal race. I am, Sir, yours faithfully,

Biometric Laboratory, University College, London, April 23rd, 1912. KARL PEARSON.

THE ADMIRALTY TEST FOR COLOUR-BLINDNESS.

To the Editor of THE LANCET.

SIR,—In your issue of April 13th, under this title, you publish a letter from Dr. F. W. Edridge-Green, Hunterian Professor of the Royal College of Surgeons of England, on the relative advantages of "matching" and "naming" in testing the colour-sense. Judging from several months' experience of examining men for railway work by various tests, including Holmgren's wools (matching) and the Edridge-Green lantern (naming), it seems to me that the lantern has certain definite advantages. It is *conclusive*. A man who will hesitate with the wools and perhaps only blunder the first

time, will repeatedly miscall the signal red, white, and green in the lantern. A rejected candidate will sometimes visit different medical men till, perchance, he finds one to pass him on the wool test. He will then appeal, but at the joint re-examination the findings of the lantern are obvious and indisputable. With the wool test I have known both normal-sighted people fail and also colour-deficient people pass. The lantern is *practical* and represents the conditions that a railwayman or sailor has to meet in his work. Ten minutes with the lantern is, indeed, a more searching test than a night on the footplate, for by means of various glasses the appearance of signal lights in different conditions of the atmosphere can be shown. On a clear night, with the signal lamps burning brightly, some men with deficient colour-sense will tell the green from the red not by the colour, but by the (to them) greater brightness. If the candidate is shown a red signal light in the Edridge-Green lantern and says he knows the colour but is not good at names, he should be asked to imagine that he is driving a train, and that the light is his signal, and be asked what is he going to do? Above all, the candidate is more readily convinced of the real and serious nature of his defect if he miscalls a signal light shown in the lantern than if, for instance, he has chosen a pale grey wool instead of a pale green one.

I am, Sir, yours faithfully,

Bowdon, Cheshire, April 22nd, 1912. KENELM H. DIGBY.

SELBORNE LECTURES.

To the Editor of THE LANCET.

SIR,—The universities are not the only bodies which have done good work in the way of extension lectures; for instance, in the north of England the Manchester Microscopical Society has for some time, by means of its extension section, brought "scientific knowledge in a popular form before societies which are unable to pay large fees to professional lecturers," and each year it issues a list of subjects with the names of those who are prepared to speak upon them.

In connexion with the central and local lectures organised by the Selborne Society a great deal of useful experience has been gained, and the benefit of this the present writer would be very glad to give to local societies, committees, or private individuals who are making their arrangements for next season by putting them into touch with those who are prepared to give good lectures in return for their expenses or for a modest fee.

I am, Sir, yours faithfully,

WILFRED MARK WEBB,
Honorary Secretary of the Selborne Society.

42, Bloomsbury-square, W.C., April 20th, 1912.

LEISHMANIA AND MOSQUITOES.

To the Editor of THE LANCET.

SIR,—Not having been occupied, like Professor Umberto Gabbi,[1] for three years in studying kala-azar, my words cannot be expected to possess the weight of *verba magistri* It may interest Professor Gabbi, however, to know that I am well acquainted with several of his "dicta." For instance, I knew, before he informed me, that Italian kala-azar was found in adults as well as in infants, and also that its symptomatology and morbid anatomy corresponded to those of Indian kala-azar. That Leishmania infantum and Leishmania donovani are synonymous terms in the minds of Italians I found out immediately after writing my original letter. This fact I noticed in Note †, p. 33, *Kala-azar Bulletin*, No. 1, Vol. I.

In the very number of THE LANCET containing Professor Franchini's original paper there is a brief *résumé* of the present position of kala-azar. There certainly Leishmania infantum and Leishmania donovani are not considered synonymous. In fact, the writer seems to think that while Professor Franchini talked of Leishmania donovani he worked with Leishmania infantum. This, I imagine, would also be the opinion of the majority of English-speaking doctors for whom, one must conclude, Professor Franchini's paper was intended, seeing it was published in THE LANCET. I would not dare to attempt the proof of the similarity or otherwise of Leishmania donovani and Leishmania infantum. That I leave to Professor Gabbi and others engaged in studying that problem of vital interest. I think I am correct in saying, however, that they are not generally considered identical.

But to revert to Professor Gabbi's statements: 1. Surely, because the two kinds of leishmania are morphologically identical one cannot claim that they are one and the same. What about the lepra bacillus and the tubercle bacillus? Morphology is a somewhat slender reed to rely upon. 2. The fact that they develop in the same medium of culture is no proof of identity. If this were so many organisms at present considered different would be the same. 3. I was not aware that they produced in monkeys the same infection. Workers in India have so far failed to infect animals with Leishmania donovani. To explain this it has been suggested that the animals were really infected, but the infection undetected—a somewhat poor compliment surely to the acuity of the workers out here. 4. Kala-azar and malaria were considered to be the same disease because the symptoms and morbid anatomy appeared similar. A careful search into these, however, revealed differences. So a careful search into the two kala-azars under discussion may in the future reveal a difference.

Because Italian kala-azar has been found in adults Professor Gabbi cannot understand how consequently one can write of a Leishmania infantum. Well, strictly speaking, he is right, but has not custom allowed the usage of many incorrect terms? I would not dare to suggest that Professor Gabbi does not know that infantile paralysis affects adults. I do not claim that by using the term "infantile paralysis" one is correct, but still one is following the common custom. As, however, Professor Gabbi insists on correct terminology, may I mention that there are some who would for that reason call Leishmania donovani Herpetomonas donovani.

Professor Franchini, in his letter, states that he thinks I cannot have read his paper carefully and then goes on to add what he has stated elsewhere. I do not claim to have read the elsewheres, and so can be excused ignorance of them. Professor Franchini's paper was published in THE LANCET, and I think he can hardly expect its readers such as myself to be acquainted with any of his Italian papers. I wrote that until he informed us that the mosquitoes used by him were not naturally infected with a species of herpetomonas, his experiments were valueless. I now read that they were not naturally infected. He seems surprised that because Anopheles stephensi is infected with a flagellate I should think it possible for Anopheles maculipennis to be similarly infected, the former being found in India and not in Europe, whereas the latter is found in Europe. My reply to this is that Musca domestica at home is infected with a herpetomonas and that Musca nebulo in India is infected with a similar herpetomonas. But what is more, in both Anopheles maculipennis and Stegomyia fasciata flagellates have actually been described, so that I fail to understand why Professor Franchini should be surprised.

If my letter should have led anyone to think that the problem of kala-azar could be "solved by a few words," I must beg them to think otherwise. Captain Patton, I.M.S., when I wrote my letter, had traced the life-history of Leishmania donovani to a certain point. Since my letter was written he has, so I read in the issue of THE LANCET containing Professor Gabbi's and Professor Franchini's letters, completed the life-history. That this has been done not by a few words, but by hard work, I for one can well believe.

I am, Sir, yours faithfully,

Calcutta, April 3rd, 1912. J. HAY BURGESS,
Captain, I.M.S.

PUBLIC VACCINATORS: A QUERY.

To the Editor of THE LANCET.

SIR,—A public vaccinator frequently has private patients who reside beyond the borders of his vaccination district, although within the same union of which his district is a part. When requested by such patients to vaccinate *primarily* their children with Government calf lymph, is he entitled to do so and enter the names of such children in his register and charge the board of guardians of the union the usual fee, or is he to refuse and refer such patients to the public vaccinator for the district in which they reside, who may be a possible rival and whom they refuse to call upon? I am under the impression that several years ago the Local

[1] THE LANCET, Feb. 24th, 1912, p. 534.

Government Board authorised such vaccinations, and consequently payments for them by the local board of guardians. I should be glad to know whether my impression is correct.

I am, Sir, yours faithfully,

April 22nd, 1912. A PUBLIC VACCINATOR.

*** There is no provision in the Vaccination Acts and Orders for the case to which our correspondent refers. The public vaccinator can only vaccinate at the cost of the guardians in his own district. Two neighbouring public vaccinators might, of course, agree to meet these special cases by each acting as deputy for the other, but under any such arrangement the particulars, including the initials of the person actually vaccinating, would have to be entered in the register of the district to which the case belongs, and the charge would be made by the public vaccinator of that district.—ED. L.

THE MEDICAL PROFESSION AND THE NATIONAL INSURANCE ACT.

To the Editor of THE LANCET.

SIR,—Dr. P. R. Cooper in his letter in your columns of April 13th takes up about 60 lines in expressing his opinion that over-visiting would not occur under a system of payment for work done. This part of his communication requires no comment. He then makes six suggestions which would, he thinks, check over-visiting if it did occur. Such of these as are not entirely illusory would be intolerably irritating in practice, and all of them are impracticable. I do not follow him in his remarks about bookkeeping. My contention in my letter of March 23rd was that an account of everything done would have to be sent in to the Insurance Committee; whether this account was written up at the end of the quarter, as I suggested, or filled up from day to day seems immaterial. I should myself prefer the former method; I should not care to carry a parcel of vouchers with me (and get them initialled!) on my rounds of visits.

As regards statistical work, reports, and that sort of thing, I cannot find them in the Act. We find such expressions as "medical attendance and treatment" and "medical practitioners who have agreed to attend and treat" (Section 15). I suppose that the Commissioners in their rules may demand this sort of work from the doctors, but surely they would demand it equally whatever system of payment was adopted.

I will not ask for more of your space; the whole question of payment for work done in a scheme like this strikes me as absurdly unreal. I cannot imagine that any medical man thinks there is the slightest chance of getting it carried into operation.

I am, Sir, yours faithfully,

Leeds, April 23rd, 1912. CHARLES F. SEVILLE.

BRISTOL DISPENSARY FOR THE PREVENTION OF CONSUMPTION.—The foundation of this institution has already been alluded to in these columns. It has been at work for about two months, but was not formally opened until Friday, April 19th. A public meeting was held at the Redcliff parish hall close by, the proceedings being started by the chairman of the committee, Mr. Colston Wintle, who is also chairman of the city health committee. He explained that the institution has been financed by private subscription, its establishment being made possible by a special donation of £300, and he appealed for funds to maintain it on the same basis. The Lord Mayor, who formally declared the dispensary open, spoke in high praise of the work for which it has been designed, and Mr. C. J. Campbell Faill, the resident medical officer, said that in seven weeks they had dealt with 241 cases; about half of these were "contacts," nearly 50 per cent. of whom were considered to be tuberculous. No case is received at the dispensary except on the recommendation of a qualified practitioner. Patients are first seen at the dispensary, and their homes are visited by the medical officer and the nurse, so that domestic conditions may be put right and infected "contacts" detected.

THE INTERNATIONAL CONGRESS ON TUBERCULOSIS AT ROME.

(FROM OUR SPECIAL MEDICAL COMMISSIONER.)

THE International Conference, which commenced on April 10th and concluded on April 14th, has already been briefly described in your columns. The preliminary proceedings concerning "human" and bovine infection were more than a mere skirmish; and before the end of the Conference the various delegates, after discussing matters very fully, and going over the results of investigations carried on in various countries, decided to meet and see whether it was not possible to agree to resolutions that would be a fair reflection of the present position of the question on infection derived from different sources. At this private meeting it was found that there was much closer agreement than had appeared at the public Conference; and ultimately the resolution that has already appeared in THE LANCET was drawn up and passed unanimously. This resolution afterwards became the finding of the Conference and, again, of the International Congress. There was, indeed, a general feeling among the representatives that there was by no means such great divergence of opinion as appeared on the surface, and as the results of work done were put forward and additional evidence adduced, the trend of opinion deviated more and more in the direction of the findings of the British Royal Commission on Tuberculosis.

Turning now to the Congress, it would be an exaggeration to state that any great or epoch-making paper was delivered, but it is no exaggeration to say that more observers are now working at tuberculosis—quietly, carefully, and conscientiously—than at any other period in the history of the disease. One could not but be impressed by the earnestness and intensity of those who came to place the results of their work before their *confrères*. Were I to state that all the work was good I am afraid I might be misleading some of the readers of THE LANCET, but after allowing for misplaced enthusiasm and some little self-deception it may well be acknowledged that at last the nations are aroused to a sense of their responsibility in regard to this disease. Very few individuals could have been able to follow the work of even one of the sections, and of these there were nominally three, actually four, at which reports and papers were read and discussed by those specially interested. Further, the number of extra meetings and lectures was so great that it would have required superhuman endurance to attend them all, while there was a tendency on the part of the lecturer who had the "first cut" of the time to monopolise it almost to the exclusion of his colleague who followed. The latter in one or two instances very wisely condensed his work into a few sentences. The worst of such an arrangement as this is that the process of condensation is not always proportionate to the importance of the work. It was a misfortune that on the first afternoon of the Congress Professor Calmette, of Lille, who gave a very interesting account of the pathological conditions of tuberculosis, had to put up with failure in his arrangements for lantern slide illustrations. His paper was a very valuable one, and the same may be said for Dr. Landouzy's brilliant oration on the etiological importance of the social factors in tuberculosis, and for a paper read by a substitute in behalf of Dr. Kraus, of Berlin, on the early diagnosis of tuberculosis.

The Congress, whose opening meeting has already been described in THE LANCET, came to an end on Saturday last, the concluding days being marked by many pleasant festivities. It has been decided that it is only to meet for the future once in five years, and by a large majority of votes—viz., 18 to 3—the British invitation of hospitality was accepted.

(FROM OUR SPECIAL SANITARY COMMISSIONER.)

Rome, April 17th.

SECTION I.—SOCIAL DEFENCE.

A Ladies' Morning.

It was on Monday morning, the 15th, that the Congress began its work; and it evidently acted on the principle of "ladies first." In the first section not only was the whole of

the first morning given over to lady speakers but they were allowed to meet in the finest meeting-places at the disposal of the Congress. The Conference, as already explained, assembled last week "right up aloft" above Hadrian's mausoleum, in the Pauline Hall, where Popes lived when they sought for safety behind the thick walls of the Castle of San Angelo. It was very beautiful, romantic, and historically interesting, but could only be reached by such continuous climbing as to suggest that it was a conference of Alpine explorers or of exponents of physical culture.

At the Congress we all met down below in the floor which constituted the old barracks, where each guard-room is devoted to a different section and gives on to a covered way or colonnade by which they are all connected. Here everyone meets everyone, and loudly expresses his delight at recognising his old friends, this joyful clatter invading the rooms where the sections meet, for they are only protected by thin doors that are more often left open than shut. But the ladies were removed from all this disturbing racket and allowed to meet in the Salone Romano. This is a large building that stands by itself, especially constructed for lectures and looks like a Greek temple. Here the special lectures are to be delivered in the afternoons; but on this Monday morning Section I, the section of Social Defence against Tuberculosis, was appointed to meet here. The papers to be read all dealt with the action of women in the war against tuberculosis. Dr. R. W. PHILIP (Edinburgh) was in the chair, and Dr. VON LYDIA RABINOWITSCH (Berlin) early took possession of the platform, to tell us that tuberculosis was contagious, could only be prevented by suppressing the risks of contamination and improving the general health, that it was a chronic malady, and the acute stage was but the ripening of an ancient infection. The first preventive measures must be taken at home and here woman was the dominant influence. Therefore, the first step was to educate women and above all check the exaggerated fears which had converted the struggle against tuberculosis into a war against the tuberculous. Dr. BORS BÈCS, from Hungary, was quickly followed by two most voluble and eloquent lady speakers, Mme. SANDESKY and Mme. la Marquise DE LUCIFERO. They both spoke in Italian and were born orators. They urged very appropriately that it was well and good to describe all the useful things that might and should be done, but where was the necessary money to be obtained? Herr BIELFELDT followed in German, urging that in the meanwhile a great deal could be done with but slender resources. For instance, there was Dr. Hervieux of Sedan, who had obtained permission for weakly children to have access to gardens where they could enjoy pure air. Ladies of the Red Cross societies were taking this matter in hand and finding places where poor children from unhealthy localities might be taken to play in gardens.

Frau MISCH described in French her activities in Berlin. The great obstacle was the fatalist disposition of the poor. They greatly needed education, and this was one of the noblest missions woman could accomplish. In their love and devotion to their sick the poor and ignorant tightly close the windows and doors and spend their small store of money to buy heavy curtains so as to exclude the light and air so essential to the recovery of the patient. Then the use of meat seemed to have been exaggerated, while the teeth to eat it were altogether neglected. The services of the dentist must be secured. Children should be taught to take pride in personal cleanliness. Educated women, women with means, should devote much of their time to visiting, to teaching, and to bringing material help to the suffering poor.

Professor G. BADALONI (Rome) then submitted his report on the influence of schools in the diffusion of tuberculosis. Among these subjects pulmonary tuberculosis rarely occurred, but the germ was to be found in the glandular system. The incorrect attitude, through using unsuitable furniture, assumed by pupils during their studies increased their susceptibility to contagion. Dr. A. Binet, at the Sorbonne of Paris, and the author of the paper, at the University of Bologna, had made experiments with the Laborde pneumograph. Illustrations were shown of the results. These clearly prove that in certain of the positions which pupils frequently assume the expansion of the lungs and the oxidation of the blood are insufficient, and a predisposition to disease is created.

Professor MAGGIORA (Italy) followed, urging that every new pupil must be examined and carefully taken in hand, and later must be watched even after he had left school. He was to be well fed and well clothed; a big staff should visit his home and see that all was in a satisfactory condition—in fact, nothing was to be left undone. But we were not told who is to pay and to organise this numerous staff of nurses and of medical officers.

Many ladies presented reports to this section. There was, for instance, Mme. ANNEMANS who described what the Belgian National League against Tuberculosis had done and the influence it had acquired. A large number of Belgian ladies were now active propagandists and were becoming popular among the poor.

Frau VON BOETTICHER (Berlin) in her report explained how the celebrated Clause 18 of the 1889 laws on compulsory insurance led to the foundation at Berlin in 1895 of the Central German Committee to Combat Tuberculosis. The Imperial Chancellor, then Prince Hohenlohe, was its honorary President, and the Minister of State, Dr. von Boetticher, its Vice-president. Care was taken to centralise the organisation and to obtain a solid financial subvention from the Government. Associations were started in all directions to build sanatoriums. Women helped actively, and the workmen's sick funds offered to pay for three months' treatment in a sanatorium of their sick members. The women visited the homes of such patients to see what help was needed when the breadwinner was away. To-day there are about 100 sanatoriums at the disposal of the German workers. If the system has been so successful and so popular it is, in a large measure, due to the sympathy and help the lady members of the central committee have devotedly brought to the families of the sufferers. In 1910 these ladies in Berlin alone made about 50,000 such visits.

After hearing many such encouraging statements the morning sitting terminated without, however, voting any resolution.

The Afternoon Session: Children and Tuberculosis.

In the afternoon the first section was no longer allowed to meet in the Salone Romano. The presence of many lady speakers was again conspicuous. Of the first nine speeches five were by ladies, one was delivered in German and eight in Italian. At this stage the patience of the foreign members of the section was exhausted and protests were made that other languages should be heard or that translations should be supplied. Nevertheless, more speeches followed in Italian when at last a diversion was made by Dr. CHABÀS, of Valencia, Spain, who spoke French. A telegram had reached him that a near relation was dying and he must start back for Spain by the first train, could he therefore read his paper at once? Moved by a natural sympathy the section readily consented, only to find that Dr. Chabàs's paper was in little wise connected with the subject under discussion nor even with the work of the section. It was a far-off echo of the great Spanish cholera epidemic, for the speaker declared himself a disciple of Dr. Ferran who, in 1885, inoculated patients against cholera at Valencia. Dr. Chabàs now advocated a similar course against tuberculosis, a bacteriological and medical question, which could not be considered under the heading of Social Defence to which the first section is devoted.

The Edinburgh Model.

A description was now read and a pamphlet with numerous illustrations distributed by Dr. R. W. PHILIP, giving a full account of what has been done in Edinburgh. This was highly appreciated, especially the coördination of all the means employed. It was pointed out that school inspection was of little use if it did not deal with the children. The dispensary, on the contrary, searched the homes for the contact cases. At Marylebone, London, as well as at Edinburgh, the great advantage of outdoor treatment and open-air schools had, said Dr. Philip, been very conclusively demonstrated.

The Grancher System.

Dr. MAURICE DE FLEURY (Paris) followed with a paper on the Preservation of Children and Youths from the Contamination of Tuberculosis. In France there were many institutions that had this object in view, but there was no compulsory insurance, and therefore there was no large fund available. They had now discovered that the danger of inheriting the disease was not worth considering, it was during childhood that the germ was sowed. The point, therefore, was to snatch the healthy child away from

contaminating surroundings before any harm was done. This was the great work of Grancher. In Paris 140 to 150 children out of 1000 were tuberculous. But among the Parisian children sent away by the poor relief organisation there was but one case in 1000; Grancher never took other than children who were healthy—at least, so far as clinical examination could show they were free from tuberculosis. These children came from families where tuberculosis existed, but apparently they had not yet contracted the disease, and the parents were persuaded to part with their children so as to save them from this danger. The foster-parents, who were found in the country, were reliable persons—generally a couple who had lost their own children. They kept these adopted Parisian lads for five to 13 years, converting them into healthy peasants. Madame Pasteur was the president of the association that carried out this work. The medical man attached took the child to its new parents, visited and examined it every month, and paid for its board. The payment was 1 franc (or 10*d.*) per day per child. It was the moral and physical salvation of these children, and it cost 10*d.* per day. In two or three months the pallid Parisian street urchin would gain 4 or 6 pounds in weight. This work had been going on for eight years, and there was no tuberculosis among the children taken from contaminated town tenements and thus brought back to the land. Not a stone had been set up for this purpose; no money was spent, except for a small office and the modest salaries of two clerks.

Holiday Colonies.

Dr. YAGOT (Angers, France) spoke of holiday colonies, showing that the examination of the blood of the children, as well as their increase in weight, proved how much benefit they derived from open-air life. The comparatively small town of Angers sent 400 children away annually, and half this number remained for six weeks in the mountains or at the seaside. This cost £3640, and the money was obtained in part from the parents, in part from State and municipal subventions. But they wanted to feed and to clothe some of the more unfortunate children when they came back. They had even a still wider ambition. They were planning various forms of games and entertainments so as to make these children happy while keeping them out of mischief.

The Pasteurisation of Milk.

Mr. NATHAN STRAUS (New York) was unfortunately ill and could not respond to the call of his name, but a small printed statement he had prepared was handed round. In this he described how $14,500,000 had been spent in the States to fight tuberculosis, and that there were now 618 anti-tuberculosis associations, 451 sanatoriums or hospitals, 365 dispensaries, 91 open-air schools, and 1 preventorium. In 1894 the United States Government, after a special investigation, completely demonstrated that "the milk from tuberculous cows is a real and considerable factor in the persistent increase of tuberculosis among human beings." Then the paper quoted numerous authorities from that date to this day to prove the danger arising from tuberculous milk. The first check in the increase of tuberculosis in New York coincided with the introduction of pasteurised milk. This was in 1906 and 1907, when the number of new cases of tuberculosis notified fell from 5·18 per 1000 inhabitants in 1905 to 4·83 and 4·50 during the two years in question. The trade now started a campaign in favour of raw milk and the notification rate rose in the three ensuing years to 5·27, 5·62, and 6·72 per 1000. Thoroughly alarmed by these figures, public opinion came round to pasteurised milk again, and in 1911 the number of new cases notified fell to 4·92. Mr. Straus did not believe in model dairies and clean milk; milk, he said, became contaminated in spite of the greatest, the most elaborate precautions, and therefore pasteurisation was the only certain precaution. He urged that it was absolutely criminal not to sterilise, as the recent Government experiments proved that bovine tuberculosis was a real danger. The section applauded this pronouncement, and concluded its first day's work.

SECTION II.—PATHOLOGY AND THERAPEUTICS.

Dr. N. ZUNTZ (Berlin) read a paper on

Light and Tuberculosis.

He confined himself to the effects of light upon the oxidation of the organism, the respiratory metabolism, and the mechanism of the respiratory movements. After a short historical summary of the subject and a special reference to the respiration experiments of Lindhard in Arctic regions, Dr. Zuntz described his own experiments made in collaboration with Durig and von Schrötter at Teneriffe in 1910. They studied the effects of intense light on those parts of the body usually protected by clothing, and found in almost all cases an increased ventilation of the lungs, and in some a diminished frequency of respiratory movements with an accompanying deepened respiration. Young people responded very promptly in this way to exposure to intense light. The speaker did not venture to draw conclusions from these results on the possible effect of light treatment upon tuberculosis; but he strongly recommended the carrying out of systematic experiments of the same kind upon tuberculous patients.

Dr. FLICK (Philadelphia) read a paper on

The Bearing of Physical Conditions upon the Pathological Anatomical Changes in the Air Passages,

in which he laid down a series of axioms with regard to normal and abnormal physical signs in the chest. While the various chest sounds could not be standardised by the human ear, nor at present by electrical instruments, Dr. Flick suggested that there should be a temporary international agreement upon a definition and a theoretical standardisation of the normal and abnormal sounds with appropriate signs for expressing them. He did not, however, think that the time was ripe for an international theoretical standardisation of adventitious sounds or of their meaning or of the meaning of changes in vibration and changes in form. He recommended the adoption of an international history sheet on which could be recorded a complete history of the case, a full record of all the symptoms, a diagrammatic charting of the diagnosis and, if possible, the prognosis, and a record on the side of the diagram of all the normal and abnormal auscultation sounds and percussion notes, of all normal and abnormal vibration sounds, of all alterations in the form of the chest, and of all adventitious sounds which may appear to be of importance to the examiner, expressed in such language as would be clear to others. He finally insisted that the diagnosis should always contain a definite opinion upon healthy tissue as well as upon diseased tissue.

Professor L. BOSSI (Genoa), Professor A. MARTIN (Berlin), and Professor PAUL BAR (Paris) contributed papers on

The Advisability of Interrupting Gestation in Cases of Pulmonary Tuberculosis.

Professor Bossi said that recent experience had confirmed his opinion that tuberculosis—which, if it does not kill the mother during pregnancy, kills her almost certainly during the puerperium—must form one of the indications for interrupting pregnancy. Experimental work, moreover, seemed to prove that in the interest also of the fœtus interruption of pregnancy might be desirable, because of the increasing danger of poisoning which it incurred towards the end of its development. Professor Bossi supported his argument by references to the progress which has been made in the technique of interrupting pregnancy and in the methods of rearing premature infants. Nowadays the dangers of infection are entirely avoidable, and the means for artificially inducing labour are such as to guarantee both the success of the operation and the least possible waste of the mother's strength. Professor Bossi here referred to his own well-known method of rapid mechanical dilatation, which he claimed had solved the technical problem in such cases. Every tuberculous pregnant woman, he continued, should be to the medical man an object of special study, not only of the clinical evidence but also of the social circumstances. Thereupon the attendant must consult with at least one of his colleagues and only operate if both opinions agree. In general terms, Professor Bossi declares that tuberculosis is a complication of pregnancy which constitutes in special circumstances an indication for artificial interruption.

Professor Martin said that manifestly active tuberculosis of the lungs and laryngeal tuberculosis are absolute indications for interrupting pregnancy, but the diagnosis must rest upon an examination aided by every resource of modern science. The results of an aseptic operation are favourable for the mother, and this is especially so in the first four months. Latent tuberculosis allows of expectant treatment, but recrudescence of the lung condition calls for immediate interference. The method of operation is unimportant so long as it is performed aseptically and without loss of blood.

Tubal sterilisation is indicated only in multiparæ. It is advisable to preserve the stump of the tube so that the faculty of conception may be re-established by a plastic operation in case the lung disease should entirely clear up. Total extirpation of the uterus and ovaries is only called for in a multipara with localised active disease of the apices in the early months of pregnancy.

Professor Bar said that it is certain that pregnancy does cause awakening of latent pulmonary tuberculosis and aggravation of this disease when already established. Nevertheless aggravation, although very common, does not inevitably occur. He divided obstetricians into abstentionists and interventionists, and having contrasted their arguments declared his dislike for absolute solutions which do not take into account the contingencies of each individual case. We must try to distinguish the favourable from the unfavourable cases, and for this purpose the tuberculin test may be valuable. In early pregnancy a violent tuberculin reaction with very mild pulmonary lesions, even when these tend to spread, is of relatively good prognosis; while a negative reaction, even with slight local lesions, calls for a guarded prognosis. The absence of reaction should therefore be an urgent indication for intervention. Professor Bar concluded by reviewing the advantages of procuring abortion and of surgical intervention.

SECTION III.—ETIOLOGY AND EPIDEMIOLOGY.

Tuberculosis in Man in Relation to Tuberculosis in Cattle and Domestic Animals.

On Monday morning the third section held a discussion on this subject, which was opened by Professor GOSIO (Rome), Professor VALLÉE (Alfort), Professor KOSSEL (Heidelberg), and Dr. GRIFFITHS (Cambridge) following with full reports of work done in France, Germany, and England.

In the afternoon Professor MARAGLIANO lectured on the Preventive Vaccination of the Human Subject against Tuberculosis.

Rome, April 20th.

RECEPTIONS AND FESTIVITIES.

As usual with congresses of this description, the week has not passed without its due accompaniment of public and private receptions and functions. Fortunately, there has been no repetition of the fiasco which occurred at the opening ceremony. In regard to the disorder that then occurred, and which led to the exclusion of members of the Congress, who were left outside in the rain while any number of persons who had no business whatsoever to be present were admitted, it is some satisfaction to note that the Italian press, especially the *Tribuna*, has not failed to denounce this bad management.

Reception by the Syndic.

On Thursday (April 18th) the Syndic or Mayor of Rome again received the Congress at the Capitol, and this proved to be quite an orderly and indeed enjoyable gathering. There was no question of crowding into one room; this time there was so much space that friends would have easily lost each other or failed to meet if they had not made previous plans. Not only were all the saloons of the municipal buildings at our disposal, together with the council chamber and the committee rooms, but the greater and the smaller of the two Capitoline Museums were closed to the general public and reserved for the members of the Congress. It was consequently possible to arrange meetings of fellow members and to examine, at the same time, the rich collection of works of art for which the Capitoline Museum and the Palazzo dei Conservatori are celebrated. Occasionally the statues fared rather badly at the hands of some of the physicians present whose knowledge of anatomy, if they were right, eclipsed their respect for art. The position of certain muscles, even in the famous Capitoline Venus, was challenged, and the possibility of a dimple, however ornamental, strenuously denied. This intrusion of realism in art was not devoid of humour, though to some it seemed almost sacrilegious. To all, however, the display of great paintings and statuary was a welcome relief after hours of talk about bacilli and tuberculosis.

The reception took place at 4 P.M. and the Mayor received his numerous guests in a thoroughly hospitable, though informal, manner. An hour later he led them to two large rooms in the upper floor of the museum where buffets had been prepared. Having some inkling of what would happen, I took up a position behind a row of plants which kept me out of the largest room, but enabled me to see through the leaves what was happening. Here I waited till the doors were thrown open, and thus obtained a full view of the assault. It was a wonderful, an incredible sight, a real race in which men and women, young and old, joined. To see so many people scamper along on the slippery floor towards cake, wine, and ices with utter disregard to appearances, formed a most extraordinary sight, and must be regarded as a real proof of the exhausting nature of these meetings. An elderly Roman lady who was also watching, turned to me and said in broken English, "Is it not wonderful so many cannot pay unto themselves some small sweet thing in a café where they could sit and eat in comfort and without such war." Nevertheless the lady was gracious enough to explain that there were often worse scenes when the reception was purely Italian, and considered that some of us foreign members of the Congress were not proficient in the art of storming a municipal buffet, which required some nerve and some practice. It struck me, however, that her latter observation was more complimentary than accurate. There is one nationality in particular which is numerously represented at such congresses and is celebrated for the successful charges delivered to reach the first line facing the buffet. In an incredibly short time nothing but crumbs and empty glasses remained where these battalions passed.

Reception at the Quirinal.

At the Quirinal Their Majesties the King and Queen received two or three of the leading representatives of the various nationalities taking part in the Congress. Though this represented a long list of visitors the British contingent remained in close conversation with Their Majesties for fully a quarter of an hour.

At the British Embassy.

On the previous afternoon, Wednesday, April 17th, the British and American—that is, the English-speaking—members of the Congress were invited to a garden-party given by Lady Rodd at the British Embassy. This was a very pleasant function. The garden is one of the genuine old Roman gardens, now becoming rare, and apart from the magnificent trees which it contains, one side of it abuts on a portion of the old wall surrounding Rome. Indeed, it is close to the Porta Pia, where a portion of this wall was battered down on Sept. 22nd, 1870, when the Papal Guards were defeated and Rome was united to Italy. On the wall close at hand are memorial tablets to those who fell on that occasion, and the reception at the Embassy afforded an opportunity of visiting this historical spot. To be in the open air and in a beautiful garden after sitting in the close, badly ventilated rooms where the Congress met was a delightful change, and this pleasure was greatly enhanced by the gracious greeting and welcome all received.

Some Private Hospitality.

The leaders of various national delegations entertained their fellow countrymen. For instance, Professor Landouzy invited all the French members to lunch with him. This is, at once, a pleasant and a useful custom, for it enables each nationality to discuss its attitude in the Congress. But some nationalities have not yet adopted the custom, and the only opportunity the British members had of meeting each other was when they were received at the British Embassy as just described. Medical men established in Rome also endeavoured to receive and entertain some of the members of the Congress. One of the most brilliant private gatherings of this description was that of Professors Giuseppe and Raffaele Bastianelli at their residence the Palazzo Mengarini.

The Banquet of the Congress.

The public banquet, to which a considerable number of foreign members were invited and entertained as guests, was so great a success that several of the organisers were crowded out of their own banqueting hall and had to take their repast in a smaller but adjoining room. This dinner took place on the evening of April 19th, at the Restaurant of the Apollo Theatre, and it was a successful but very crowded function. Though uncomfortable, it testified to the success of the Congress. But it was not organised as a public banquet.

Professor MARAGLIANO, who was in the chair, did not preside in the accepted sense of the word. He certainly

rose to propose the first toast, made an eloquent speech in Italian, and concluded by drinking to the health of the political and the medical press, which, he said, he knew full well would not fail "to convey to the whole world our common aspirations." Thereupon a German proposed in a few words of Italian the health of Italy, and Dr. LESLIE MACKENZIE, in French, drank to Italian science. A pause followed. No one knew who was expected to speak or what were supposed to be the toasts on the list. This was left to the inspiration of those present. Professor LANDOUZY then rose, but this most eloquent and graceful of speakers contented himself with enumerating the various leading personages who had most contributed to the success of the Congress. He saluted the great masters of Italy, Professor Baccelli, the president of the Congress; Professor Maragliano, who had on several occasions so effectively presided; Their Majesties the King and Queen, who had lent their moral help; and the Syndic of Rome who had received them.

Dr. RAOUL BLONDEL, secretary-general of the Association of the International Medical Press, then returned thanks in the name of the press for the very efficient help given by the organisers of the Congress. Never before, he said, had the press been so well looked after. For the first time a summary of the proceedings had been printed and issued to the press twice a day. No one better than the press representatives understood the immense amount of unrecognised work which the organisation of a congress implied, and which in this case had been so ably performed by Dr. Ascoli.

Dr. H. VON SCHRÖTTER, on behalf of Austria, said a few words and was followed briefly by Dr. FERRAND of the United States, but no real speeches were delivered.

A master of the ceremonies was much needed according to English ideas, but apparently in Italy there seems to be no established custom as to formalities and procedure at such banquets. The proposing of toasts is left to chance. What the function lacked in dignity and impressiveness it gained, however, in friendly joviality. So it came about that the final gathering of the Congress, largely attended and in a scrambling manner thoroughly enjoyed, testified, by the force of numbers and by their happiness, to the success of the Congress.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Proposed Country Home for Glasgow Children.

THE corporation of Glasgow, on the recommendation of the subcommittee on the prevention of tuberculosis, has considered the providing of a home for children predisposed to pulmonary phthisis. It is proposed to approach the Insurance Commissioners, the Local Government Board, and the parish council on the question of expense, but even if the whole cost ultimately falls upon the ratepayers it will be infinitesimal compared with the benefits gained. The Glasgow School Board has expressed its gratification at this step and in the event of the home being established has agreed to coöperate with the corporation by providing the teaching staff and the schoolroom equipment. The subcommittee in charge of the scheme has recommended that a home should be provided in the vicinity of the city for the accommodation meantime of 50 children, with ground attached to it sufficient for further buildings to accommodate 250.

Association of Physicians of Great Britain and Ireland.

The annual meeting of this association was held last week within the precincts of Glasgow University with a large attendance. While the membership is limited and the meetings are not open to the public, medical visitors are invited, and this was taken advantage of by medical men in the neighbourhood. Sir Thomas Barlow presided, but subsequently vacated the chair on the election of Dr. George S. Middleton, of Glasgow. Sir Donald MacAlister, principal of Glasgow University, was appointed an honorary member of the association.

Glasgow Maternity Hospital.

At the seventy-fifth annual meeting of the subscribers to this hospital a strong appeal was submitted for an increase in the contributions in order that the excellent work which has been developed might not be impaired or curtailed. Two or three years ago the hospital was rebuilt on a large and modern scale, and still more recently gynæcological wards were opened. The deficit in the working is so serious that the directors point out that unless the capital funds still required are soon subscribed, and unless a substantial increase in yearly income is forthcoming in the near future, the maternity work of the hospital may have to be curtailed.

Post-graduate Course in Clinical Pathology.

A practical course will be conducted in the Laboratory of Clinical Pathology at the Western Infirmary, Glasgow, commencing on Wednesday, May 1st, and will extend over about six weeks. The class will meet for two hours thrice weekly at times to be arranged. The subjects taken up will include blood examination; clinical bacteriology (blood culture, diphtheria diagnosis, detection of spirochætæ, and vaccines); sero-diagnosis (Widal reaction, Wassermann reaction, opsonic estimations); examination of stomach contents and fæces; the less usual urinary constituents, &c. Dr. Carl H. Browning, director of the laboratory, will give further information.

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Death of Dr. W. H. Williamson.

The death of Dr. W. H. Williamson occurred on April 13th at his residence, 15, Union-terrace, Aberdeen. He was the son of Mr. William Williamson, who practised as a dental surgeon in Aberdeen. Born in Leicester, he was educated at Aberdeen Grammar School and University, where he took the M.B. with highest honours in 1874 and the M.D. in 1880. He went to Edinburgh, where he became L.D.S. in 1881. He took the D.D.S. at the University of Pennsylvania afterwards. In 1882 he returned to Aberdeen, and on his father's death continued in practice there, in which he was eminently successful. He was for many years dental surgeon for the Aberdeen Royal Infirmary, and in 1904–05 he was President of the British Dental Association. Dr. Williamson was a man of wide and cultured tastes. He was 59 years of age and leaves three sons and two daughters.

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Dr. Thomas F. Dewar, in accordance with instructions received from the Local Government Board, has made an

inspection of the East Poorhouse, Dundee, at different dates, and he reports that in his opinion the management of the poorhouse is on the whole good, and that the rumours of serious impropriety are not likely to be true. With regard to accommodation, while the number of inmates was less than that sanctioned by the Board, in his opinion the poorhouse must be regarded as full. While there was no overcrowding as regards space, some of the inmates had to sleep on shake-downs, and in some of the sleeping rooms these were placed head to head. The heating and cleanliness were, on the whole, satisfactory. A kindly and humane atmosphere pervaded the administration. With regard to the hospital, Dr. Dewar reports that from time to time, and particularly in winter, the accommodation is considerably congested on both male and female sides. The three medical officers are zealous and diligent, and the nursing requirements have been met from time to time as circumstances required. An operating room is urgently needed, and the poorhouse committee and the parish council are urged to provide one constructed on modern lines.

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A meeting of representatives of parishes interested in obtaining representation on the board of Chalmers Hospital, Banff, was held in Buckie on April 13th. In May, 1911, the Local Government Board issued an order granting representation to the parishes of Aberchirder, Ordiquhill, Deskford, Cullen, Banff, Alvah, Gamrie, and Rathven. The trustees of the Chalmers Hospital, Banff, have continuously refused to admit the representatives of these parishes to their meetings, on the grounds essentially that the Local Government Board's [illegible] to give representation to the aforesaid parishes were [illegible] in which opinion they were supported by counsel. [illegible] have also refused to join in any stated case to [illegible]o the courts, on the ground that there is no [illegible]ority, either in the Local Government Act, [illegible]-law Act of 1845, entitling parish councils [illegible]ssment in pursuing an object which is [illegible] and not in any sense obligatory on them, [illegible] such pursuit may end in litigation. The [illegible]s held to decide what action should be [illegible]resentation, resolved:

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April 23rd.

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(FROM OUR OWN CORRESPONDENTS.)

Advisory Committee to the Irish Insurance Commissioners.

THE names of the members of the Advisory Committee to the Irish Insurance Commissioners were published a few days ago. Of the five medical men appointed three were the nominees of the conjoint committee of the British and Irish Medical Associations—viz., Dr. J. S. Darling, of Lurgan, Dr. T. Donnelly, of Dublin, and Dr. T. B. Costello, of Tuam, all of whom hold Poor-law appointments. The other two are the Right Hon. Dr. Michael F. Cox, of Dublin, and Dr. P. T. O'Sullivan, of Cork. The disproportionate representation given to the Poor-law service, which includes about one-third of the profession in Ireland, and sends three-fifths of the medical members to the committee, is causing some discontent. The nursing representatives on the committee are Miss Ramsden, matron of the Rotunda Hospital, and Miss Hannan, matron of the Mater Infirmorum Hospital, Belfast.

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That this conference unanimously resolves, provided the parishes of Gamrie and Alvah acquiesce, to raise an action in the Court of Session against the trustees of the Chalmers Hospital, Banff, in order to vindicate the Order of the Local Government Board of May 5th, 1911.

They were encouraged to this action by a letter from the Local Government Board, stating that while fully cognisant of the position of the trustees with regard to the inclusion of the parish of Fordyce in the scheme of representation, the Board was of opinion that the collection made in the parish substantially fulfilled the conditions of the proposed deed, and with regard to the point raised by the trustees that the trust did not fall within Section 30 (4) of the Local Government Act, the Board was advised that it did, and was of further opinion that the parish councils interested had power to expend rates in litigation if the trustees persisted in rejecting their claim to representation.

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Congress of French Alienists and Neurologists.

THE Thirteenth Congress of French Alienists and Neurologists was held at Tunis from April 1st to 7th. It was highly successful, thanks chiefly to its secretary-general. The Ministries of the Interior, of the Colonies, of War, and of Marine were represented officially. Those in attendance were numerous, and many learned societies were represented. The receptions, the visits to the hospitals and the sights of the town and to the charitable institutions were very

interesting. The opening ceremony was performed by the resident-general, M. Alapetite. The first communication was made by M. Chavigny, *professeur agrégé* at the Val de Grâce, on the Nervous and Mental Complications of Paludism. Among the first of these he classed peripheral, spinal, and central troubles with those of the sense organs, according to the organs attacked, and in the complications affecting the peripheral nervous system he cited neuralgia of the trigeminal, sciatic, occipital, intercostal, and ovarian nerves, and coccygodynia; then the neuritides, certain cases of polyneuritis, and the myelitides. Among the spinal affections he named disseminated sclerosis and Parkinson's disease. Among the complications of the central nervous system were cases of aphasia, hemiplegias, and various paralyses. In the mental complications of paludism were found the neuroses, the psycho-neuroses, and the psychoses. Paludism was also an etiological factor in neurasthenia. M. Dumolard, M. Régis, M. Vigouroux, M. Simonin, M. Anglade, and M. Dupré discussed the subject. M. Régis and M. Reboul then read a communication on the Care of the Insane in the Colonies. This report was the most important of the Congress, and the recommendations made by the authors were approved by all the speakers and members of the Congress present. These recommendations were as follows: Inasmuch as it is urgently necessary to organise effectively the care of the insane in the French colonies and protectorates, the members of the Thirteenth Congress unanimously endorse the conclusions arrived at in the report presented to the Congress by M. Régis and M. Reboul, and recommend the formation, under the conditions laid down in the report, of special colonial psychiatric clinics, both military and civil. They further recommend legislation in regard to the insane in the colonies, having for its basis certain common principles, with specialised regulations according to local necessities: retreats and establishments for the maniacal (*délirants*) and insane, constituting for each colony a kind of network of psychiatric assistance, with very simple outlying stations and central depôts of more or less importance according to circumstances, insane asylums if possible, these last being always under the direction of a French alienist assisted by native physicians with a native *personnel*. It is further contended that the sending of the native insane to French asylums should cease entirely three years hence, and that the return of European insane, both civil and military, should be carried out under more satisfactory conditions than at present is the case. Finally, it is recommended, with a view to the prevention of madness in the colonies, that in the selection of both civil and military European *personnel* for the colonies mental fitness should, as much as possible, be considered, and particularly that alcoholism, the great provoker of psychoses, should be immediately combated by the most energetic measures, in place of being encouraged and favoured as it is to-day. M. Vital Robert, M. Cazenove, M. Leven, M. Grall, M. Desourteaux, M. Blanc, and M. Simonin in succession discussed related questions, and finally a report was read by M. Dupré on perversions of the instincts.

A Campaign against Tinea.

By direction of the Minister of the Interior a circular has been sent to all the prefects of departments as to the best method of rendering assistance in the case of children affected with tinea, and the prefects have been advised that the supervising council of the Assistance Publique of Paris and the municipal council have favourably recommended the admission to the Hôpital St. Louis of such children from the provinces. As regards the daily cost of maintenance, while the normal rate is 4·70 francs the great national importance of the speedy and definitive abolition of tinea from France is not overlooked. Considerations of this kind the city of Paris has always honourably taken into account. Further, by a decree of the Prefect of the Seine, the hospital administration is authorised to receive henceforth such patients at a daily price of 3 francs. The number of places at disposal for this purpose reaches 100.

Maternity Assistance.

On the motion of M. Louis Dausset and M. Hénir Galli, the Municipal Council of Paris has passed the proposal that every pregnant woman who has been domiciled in Paris for at least two years, and whose annual resources do not exceed (whether in salary or income) 1800 francs, shall be entitled to assistance. To receive the benefits she must make known before the seventh month to the mayor of the arrondissement in which she lives the fact of her pregnancy. Pregnancy being established, her name is to be entered on the lists of the *Mutualité maternelle*, and she will receive as an extra-statutory member the advantages accorded by it. On demand also and on declaration of pregnancy at the seventh month, the wife of every one doing his military service in the army stationed in Paris, even though resident there less than two years, shall receive equivalent aid. The city of Paris will pay to the treasury of the *Mutualité maternelle* the sum of 20 francs for each extra-statutory patient thus admitted.

Antitetanic Serum Therapy.

A disquieting discussion took place at the Société de Chirurgie in the two meetings of March 27th and April 3rd. At the first meeting M. Riche reported an observation of M. Louyriac, which seemed to show that injections of anti-tetanic serum, freshly made and considered harmless, may entail serious phenomena and even death. He cited in support the case of a youth who was taken on the evening of the injection with headache, vomiting, and diarrhœa, and who eventually succumbed. M. Lucas-Championnière, M. Routier, M. Schwartz, M. Delbet, M. Demoulin, and M. Kirmisson contended that the fear of such accidents should by no means lead to the abandonment of such injections. M. Savariaud and M. Thiéry expressed their belief that these injections were harmless, but they had no faith in their efficacy. M. Sieur concluded by saying that in all the cases in which he had caused the injections to be continued until after cicatrisation he had never seen tetanus follow. Moreover, the experience of the war of 1870 might be set off against that of to-day. In 1870 an epidemic of tetanus was observed; nowadays there was none. At the following meeting M. Jacoub, of the Val de Grâce, supported by his own experience the conclusions formulated at the previous meeting by M. Sieur, as to the excellent results of preventive antitetanic serum therapy in military surgery. Finally, M. Reynier cited a accident observed by one of his colleagues in the case of lady, in whom after a single injection of 5 c.c. of antitetan serum serious cardiac trouble set in and lasted for more th a year before disappearing.

April 22nd.

VIENNA.

(FROM OUR OWN CORRESPONDENT.)

A Sporadic Case of Small-pox.

UNDER our education laws the attendance of children at elementary schools is compulsory, and owing to the strict enforcement of the regulation which requires every child attending such schools to produce a certificate of vaccination, nearly the entire population of this country has been vaccinated at least once. When three years ago a small outbreak of small-pox occurred in Vienna, the population were so alarmed that nearly the entire city was revaccinated. There have in fact been very few cases of small-pox ever since the introduction of general vaccination in Vienna in 1873. No case has been notified here since the autumn of 1910, until a few days ago a young man was found to be suffering from it. He had come here on business from Galicia, and the officers of the board of health traced the origin of his attack to his native place, which he had recently left, and where several cases of small-pox are just now under observation. Of course, all the necessary prophylactic measures have been carried out with the greatest care, so as to prevent any spread of the infection here.

The Problem of Cheap Sanitary Dwellings.

The constant rise in the rents of small flats and similar dwellings in recent years has become quite a serious matter in this city, and has engaged the attention of numerous corporations as well as of philanthropists, both social and medical. The population has grown from 1,370,000 in the year 1900 to over 2,000,000 in 1910; numerous houses have also been pulled down, especially since 1909, being replaced for the most part by business premises. Whilst up to 1905 there were over 8000 dwellings with 17,000 rooms empty every year, the figures have gone down to 2010 vacant dwellings with only 3500 rooms, a change which makes it

difficult for the lower middle classes to find suitable accommodation. At the same time rents have gone up rapidly by amounts varying from 30 to 50 per cent., and there is not as yet any sign of decline. Overcrowding in tenements and the habit of subletting have therefore become common among a large proportion of the population, with its deleterious effects as regards public health, morals, and the power of resistance to insanitary surroundings. The municipality does not at present see its way to erect a large number of houses for the working classes, but the Krankencassen (friendly societies or sick clubs) have availed themselves of a new law passed by Parliament in this respect. This law declares that in order to encourage the building of sanitary and moderately rented dwellings, a sum sufficient to guarantee a sure, but modest, interest on the capital outlay will be guaranteed to each corporation for this purpose. The Krankencassen will therefore within a year erect in Vienna tenements containing 4000 sanitary dwellings, of course only for their members, for they think that this is the most promising means to bring down the number of their cases of tuberculosis. Other corporations will follow suit, but although according to the yearly increase of the population at least 8000 new dwellings are required yearly, this figure is far from being reached. Extensive schemes for the erection of commodious buildings, for the cheap and rapid transport of large masses of people, and for the formation of public parks and recreation grounds are now under consideration, so that many improvements in existing social conditions may be expected within a reasonable time.

Foreign Body in the Vagina.

At [illegible] meeting of the Vienna Medical Society a girl [illegible]n who had suffered from a sanguineous [illegible]lva off and on for eight months. [illegible] been consulted but to no purpose. [illegible] observation in the hospital the [illegible]at first entertained. A rectal [illegible]d the presence of some foreign [illegible]d after very careful searching [illegible]on itself, was found. It had [illegible] some hæmorrhage at times [illegible]ing the urethra. How it was [illegible]ined.

SOUTH AFRICA.

(FROM OUR OWN CORRESPONDENT.)

[illegible]ity Amongst Mine Employees.

THE appalling loss of life on the mines in South Africa shows but little signs of diminishing, and the mortality constitutes a blot on the Administration. The history and work of the Mining Regulations Commission have been narrated in a letter signed by Dr. Charles Porter, Mr. F. E. T. Krause, and Mr. A. Heymann, dated Dec. 18th, 1911, and published in THE LANCET of Jan. 13th, 1912, p. 121. No one would desire to discount the work of that Commission, but so far the results have not been very convincing. Until recently at any rate the Government has remained seemingly indifferent, and the public appear to be only commencing to realise what is actually occurring in their midst. The Chamber of Mines has done something to ameliorate the conditions of life on the mines in recent years, but such action as it has taken has been more as a sop to public opinion than a recognition of conditions existing that would not be tolerated in a more enlightened community.

A mortality return of mine employees in the Union was published a few weeks ago by the Government. The return is an unsatisfactory one, for it merely gives the bare totals and does not furnish information in respect of the different occupations in which the employees have been engaged, nor does it furnish the figures for the different native races employed. In the province of the Cape the *mortality from disease* alone on the mines during the quarter ended Sept. 30th, 1911, was at the rate of 11·004 per 1000 per annum for Europeans, for coloured persons 20·748, or for all races 19·731. In the province of Natal it was for all Europeans *nil*, for coloured persons 13·745, or for all races 13·123. In the Transvaal it was for Europeans 14·194, for coloured persons 28·466, or a total of 26·909 for all races. And in the Free State it was 2·926 for Europeans, 26·797 for coloured persons, or a total of 24·593 for all races.

The mines in the Transvaal employed a monthly average of 252,402 persons, as compared with 20,881, 11,583, and 14,801 persons who were similarly employed in the provinces of the Cape, Natal, and Orange Free State respectively. It is therefore to the statistics for the Transvaal that attention must be particularly directed. In spite of a mistaken policy of permitting whenever practicable sick natives to return to their homes from the mines, even when unfit to travel, and although the natives engaged are supposed to be only those who are medically fit and who are in the prime of life, and although they are only engaged for short periods at a time and therefore are not likely to contract occupational diseases such as miners' phthisis to the same extent as European employees who are continuously engaged on mining work, the return shows that there is an actual death-rate from disease alone on the Transvaal mines amongst native mine labourers of 28·466 per 1000 per annum.

These figures are bad enough, but in Parliament the Minister of Native Affairs has stated he had carried out an investigation himself and had found a state of things that was almost incredible. He found in one mine that the average death-rate of natives from tropical areas was 391 per 1000, or practically 40 per cent. Rates of 190, 160, and 250 were not unusual, and to show the extent of the mortality he quoted the following figures for various mines: Goerz Group, 91, 105, 160, 168, 172; Ecksteins, 72, 85, 92, 137, 81, 65, 269, 204, 257; Robinson Group, 43, 40, 112, 88; General Mining, 88, 139, 99, 88, 71, 99, 103; Rand Mines, 96, 137, 127, 73, 38, 72, 156. The Minister stated, and stated deliberately, that it was high time they had their consciences awakened against "this cynical disregard for human life." He has come to the conclusion that steps could be taken by the mines, and mentioned that at some mines matters had been remedied. There were, however, some groups where the state of affairs still continued, and the Government intended to prevent tropical natives working on these groups. Unless this was done it would be necessary for the Government to stop the importation of tropical natives altogether. As to Nyasaland labour he found practically no improvement, and the record was enormous, the average being about 279. The Imperial Government had been moving in the matter, and the Union Government had come to the conclusion in view of the existing state of affairs, and were communicating with the British Government to the effect that they were at one with them in any action they might think fit to stop the importation of labourers from that area.

No wonder there are thinking men who hold the extreme view that if the gold mines on the Rand cannot be worked except with such a wastage of human life they ought to be shut down or their activities at least restricted. Unfortunately, in South Africa the average man does not look upon the loss of a native life as a serious matter to the country, and yet it is if only from the economic standpoint, for month by month the labour supply appears to be failing to keep up with the demand, and almost every industry is complaining of the labour shortage. The wonder is that the mines are able to get the labour they do, for it is fairly certain that the facts with regard to health and mortality are gradually becoming known amongst the native tribes in the Union, and it is only the high wages offered that enable labourers still to be obtained.

Unfortunately mine-owners do not yet appear to have grasped the fact that it is in their own interests to take all possible steps to conserve the health of their labourers, and that the policy which has been pursued up to the present will one day react upon themselves, as the labour shortage will unquestionably become more acute the longer the existing unsatisfactory conditions are allowed to remain. The duty of the Government is clearly in the direction of instituting a proper system of medical inspection throughout the mines, but it is a duty that is not likely to be taken up by the present Ministry, which has distinguished itself amongst other things by abolishing the health administrations that existed prior to union and by failing to provide any adequate machinery in their place.

It is not alone the mortality from disease which is excessive, for the *mortality from accidents* is also serious. During the same quarter in the Cape province the mortality per 1000 per annum from accidents, including homicide and

interesting. The opening ceremony was performed by the resident-general, M. Alapetite. The first communication was made by M. Chavigny, *professeur agrégé* at the Val de Grâce, on the Nervous and Mental Complications of Paludism. Among the first of these he classed peripheral, spinal, and central troubles with those of the sense organs, according to the organs attacked, and in the complications affecting the peripheral nervous system he cited neuralgia of the trigeminal, sciatic, occipital, intercostal, and ovarian nerves, and coccygodynia; then the neuritides, certain cases of polyneuritis, and the myelitides. Among the spinal affections he named disseminated sclerosis and Parkinson's disease. Among the complications of the central nervous system were cases of aphasia, hemiplegias, and various paralyses. In the mental complications of paludism were found the neuroses, the psycho-neuroses, and the psychoses. Paludism was also an etiological factor in neurasthenia. M. Dumolard, M. Régis, M. Vigouroux, M. Simonin, M. Anglade, and M. Dupré discussed the subject. M. Régis and M. Reboul then read a communication on the Care of the Insane in the Colonies. This report was the most important of the Congress, and the recommendations made by the authors were approved by all the speakers and members of the Congress present. These recommendations were as follows: Inasmuch as it is urgently necessary to organise effectively the care of the insane in the French colonies and protectorates, the members of the Thirteenth Congress unanimously endorse the conclusions arrived at in the report presented to the Congress by M. Régis and M. Reboul, and recommend the formation, under the conditions laid down in the report, of special colonial psychiatric clinics, both military and civil. They further recommend legislation in regard to the insane in the colonies, having for its basis certain common principles, with specialised regulations according to local necessities: retreats and establishments for the maniacal (*délirants*) and insane, constituting for each colony a kind of network of psychiatric assistance, with very simple outlying stations and central depôts of more or less importance according to circumstances, insane asylums if possible, these last being always under the direction of a French alienist assisted by native physicians with a native *personnel*. It is further contended that the sending of the native insane to French asylums should cease entirely three years hence, and that the return of European insane, both civil and military, should be carried out under more satisfactory conditions than at present is the case. Finally, it is recommended, with a view to the prevention of madness in the colonies, that in the selection of both civil and military European *personnel* for the colonies mental fitness should, as much as possible, be considered, and particularly that alcoholism, the great provoker of psychoses, should be immediately combated by the most energetic measures, in place of being encouraged and favoured as it is to-day. M. Vital Robert, M. Cazenove, M. Leven, M. Grall, M. Desourteaux, M. Blanc, and M. Simonin in succession discussed related questions, and finally a report was read by M. Dupré on perversions of the instincts.

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April 22nd.

VIENNA.

(FROM OUR OWN CORRESPONDENT.)

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The constant rise in the rents of small flats and similar dwellings in recent years has become quite a serious matter in this city, and has engaged the attention of numerous corporations as well as of philanthropists, both social and medical. The population has grown from 1,370,000 in the year 1900 to over 2,000,000 in 1910; numerous houses have also been pulled down, especially since 1909, being replaced for the most part by business premises. Whilst up to 1905 there were over 8000 dwellings with 17,000 rooms empty every year, the figures have gone down to 2010 vacant dwellings with only 3500 rooms, a change which makes it

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Foreign Body in the Vagina.

At a recent meeting of the Vienna Medical Society a girl of 6 years was shown who had suffered from a sanguineous discharge from the vulva off and on for eight months. Several medical men had been consulted but to no purpose. When the child came under observation in the hospital the idea of a neoplasm was at first entertained. A rectal examination, however, revealed the presence of some foreign body high up in the vagina, and after very careful searching an embedded hairpin, twisted on itself, was found. It had caused no other trouble except some hæmorrhage at times and was extracted without injuring the urethra. How it was introduced could not be ascertained.

April 22nd.

NOTES FROM SOUTH AFRICA.

(FROM OUR OWN CORRESPONDENT.)

Mortality Amongst Mine Employees.

THE appalling loss of life on the mines in South Africa shows but little signs of diminishing, and the mortality constitutes a blot on the Administration. The history and work of the Mining Regulations Commission have been narrated in a letter signed by Dr. Charles Porter, Mr. F. E. T. Krause, and Mr. A. Heymann, dated Dec. 18th, 1911, and published in THE LANCET of Jan. 13th, 1912, p. 121. No one would desire to discount the work of that Commission, but so far the results have not been very convincing. Until recently at any rate the Government has remained seemingly indifferent, and the public appear to be only commencing to realise what is actually occurring in their midst. The Chamber of Mines has done something to ameliorate the conditions of life on the mines in recent years, but such action as it has taken has been more as a sop to public opinion than a recognition of conditions existing that would not be tolerated in a more enlightened community.

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No wonder there are thinking men who hold the extreme view that if the gold mines on the Rand cannot be worked except with such a wastage of human life they ought to be shut down or their activities at least restricted. Unfortunately, in South Africa the average man does not look upon the loss of a native life as a serious matter to the country, and yet it is if only from the economic standpoint, for month by month the labour supply appears to be failing to keep up with the demand, and almost every industry is complaining of the labour shortage. The wonder is that the mines are able to get the labour they do, for it is fairly certain that the facts with regard to health and mortality are gradually becoming known amongst the native tribes in the Union, and it is only the high wages offered that enable labourers still to be obtained.

Unfortunately mine-owners do not yet appear to have grasped the fact that it is in their own interests to take all possible steps to conserve the health of their labourers, and that the policy which has been pursued up to the present will one day react upon themselves, as the labour shortage will unquestionably become more acute the longer the existing unsatisfactory conditions are allowed to remain. The duty of the Government is clearly in the direction of instituting a proper system of medical inspection throughout the mines, but it is a duty that is not likely to be taken up by the present Ministry, which has distinguished itself amongst other things by abolishing the health administrations that existed prior to union and by failing to provide any adequate machinery in their place.

It is not alone the mortality from disease which is excessive, for the *mortality from accidents* is also serious. During the same quarter in the Cape province the mortality per 1000 per annum from accidents, including homicide and

suicide, was: for Europeans at the rate of 3·66, for coloured persons 1·92, or for all races 2·107. In Natal it was for Europeans *nil*, for coloured persons 3·61, or for all races 3·45. In the Transvaal it was for Europeans 4·22, for coloured persons 4·32, and for all races 4·31; while in the Free State for Europeans it was *nil*, for coloured persons 3·27, or for all races 2·97.

The mortality-rate from accidents on the Transvaal mines constitutes a public scandal that would not be tolerated elsewhere. One of the principal reasons for it is, of course, the presence of such a large proportion of semi-savages who are absolutely ignorant of underground conditions. There was a stringent law passed last session to regulate mining work, but it is very largely a dead letter. Discipline on many of the mines is slack, and a number of the inspectors are extremely lenient. Many of the miners on the Rand are merely rock-breakers, and should never have been granted blasting certificates.

There are other causes, such as the constant changing about of both managers and men, the casual manner in which natives are instructed in their duties, and the fact that many of the mills are far too big, with the result that they are fed with rock which, for safety's sake, should have been left below to prevent falls of rock. Indeed, "speeding up" is the main cause of accidents on some mines, and is due to the desire to keep the big mills working to their full extent. In some mines, again, far too few safety pillars are provided, and this is frequently the direct cause of accident. At others the engine-rooms seem to be responsible for much of the mortality from accidents, for at these deaths from violence appear to be mainly due to the dropping of skips, &c.

At most of the mines there is almost an entire absence of organisation in first-aid, and many lives would be saved if a proper organisation existed. Here, again, one can only express wonder that the Chamber of Mines does not in the interests of mine-owners take this matter up, for an efficient system of first-aid would mean an immense saving in compensation. It is, however, mostly native lives that are sacrificed, and native lives are cheap.

March 13th.

DONATIONS AND BEQUESTS.—Under the will of the late Mr. Frederick Noakes the Royal National Hospital for Consumption and Diseases of the Chest, Ventnor, will benefit by a sum of £1000, and the following institutions will each receive £500: Dr. Barnardo's Homes; Earlswood Asylum for Idiots; the Royal Blind Pension Society; the Incurable Asylum, Putney; the Incurable Asylum, Streatham; the Brompton Cancer Hospital; the Brompton Hospital for Consumption; the East Sussex Hospital, Hastings; and the Eversfield Chest Hospital, St. Leonards.—Under the will of the late Mr. Arthur Sassoon the London Hospital, the Metropolitan Hospital, Kingsland-road, and the Home and Hospital for Jewish Incurables will each receive £2000. Over £20,000 have been left for distribution among charities as the trustees shall think fit.—King Edward's Hospital Fund for London has received £1000 from the Goldsmiths' Company and £500 from the Clothworkers' Company.

SOCIETY FOR RELIEF OF WIDOWS AND ORPHANS OF MEDICAL MEN.—A quarterly Court of the Directors of this society was held on April 10th, when the Right Hon. Sir Thomas Boor Crosby, Lord Mayor, one of the vice-presidents of the society, occupied the chair. Two gentlemen were elected members of the society. By the kind invitation of the Lord Mayor, the annual general meeting of the society will be held at the Mansion House on Wednesday, May 15th, at 5 P.M. The invested funds of the society now amount to £101,600. Relief is only granted to the widows and orphans of deceased members, and since the last court five letters had been received from widows of medical men asking for relief, but this had to be refused as their husbands had not been members. Membership is open to any registered medical practitioner who at the time of his election is resident within a 20-mile radius of Charing Cross. The annual subscription is 2 guineas. Life membership may be obtained on special terms varying with the age of the applicant. Proposal forms and full particulars may be obtained from the secretary, at the offices of the society, 11, Chandos-street, Cavendish-square, London, W.

Obituary.

WILLIAM OGLE, M.A., D.M. OXON., F.R.C.P. LOND.,

LATE SUPERINTENDENT OF STATISTICS, GENERAL REGISTER OFFICE.

WE announced last week with great regret the death of Dr. William Ogle, which occurred on April 12th at his residence, 10, Gordon-street, W.C. His death, at the advanced age of 85 years, removes from amongst us a physician and scholar who in his early prime had exerted a powerful influence for good on the rising generation of our profession, and who in later years had devoted his well-trained energies to the study and development of the statistical aspect of preventive medical science. Of the pupils in the "sixties" of the brilliant young physician and teacher at St. George's Hospital not many now survive, but among his intimate friends who are still with us there is not one who does not treasure his memory with affection and esteem.

William Ogle was the son of Dr. John Ogle, at one time Regius Professor of Medicine at Oxford. After a distinguished career at Rugby he entered Corpus Christi College as a scholar. He was placed in the first class in the school of natural science, and was elected a Fellow of his College shortly after taking his Bachelor's degree. As a condition necessary at that time to the holding of his Fellowship Ogle was ordained deacon; but he shortly afterwards relinquished Holy Orders and devoted himself to the study of medicine, proceeding in due course to the degrees of M.A. and D.M. in the University. Ogle's claim to reputation as a classical scholar rests on the accuracy of his translation of Aristotle's great work on "The Parts of Animals," which ran through two editions, as well as his translation with introduction and notes of the less familiar work by the same author on "Youth and Old Age, Life and Death, and Respiration," which was published so recently as the year 1897.

Shortly after his establishment in London Ogle was appointed assistant physician to St. George's Hospital and lecturer on physiology to its medical school, having been previously elected to the Fellowship of the Royal College of Physicians. In the year 1872 temporary failure in health induced him to leave London, greatly to the regret of his colleagues and friends, as well as of a large class of students who, attracted by his brilliant teaching, flocked in large numbers to his out-patient department on the days of his attendance. On relinquishing private practice Dr. Ogle accepted the appointment of medical officer of health for South Hertfordshire, and acted for a time as public examiner in natural science at Oxford. In the former capacity he attracted the notice of Sir George Buchanan, principal medical officer to the Local Government Board, through whose influence he was appointed in 1880 to succeed Dr. Farr as chief of the statistical department of the General Register Office. His health being now restored Dr. Ogle directed his energies to the perfecting of the national system of vital statistics, the groundwork of which had been so truly laid by his great predecessor, the acknowledged "founder of statistical science." Dr. Ogle's term of office at Somerset House was a comparatively brief one. Like many other distinguished officers of the State he did not enter the Civil Service until success in his own profession had been assured. Yet, within the compass of less than 13 years, he achieved a record which might have represented the life work of a less able and energetic man.

On assuming office in 1880 Dr. Ogle's first and most arduous duty was that of organising the Census of 1881—a task which, undertaken though it was after insufficient notice, and without the advantage of previous experience, he accomplished with a success that reflected distinction on his department and himself. Immediately after and dependent upon the enumeration in April, 1881, came the compilation of the several Census reports, for which purpose a large staff of abstractors was, of course, required. Concurrently with this work came the writing of the decennial supplement for 1871–80, a duty which could only be efficiently discharged by a medical man, and which is based on statistical material that cannot be obtained otherwise than by actual enumeration of the people. With this object in view Ogle constructed a new English life table showing the expectation of life of males and females in 1871–80, and comparing this with the expectation shown by Dr. Farr's

life table for 1838–54. The subject of mortality, without reference to cause, among workers at different occupations had been dealt with in two preceding decennial supplements; but in making a similar investigation for the period 1880–1–2 the mortality was shown, not only in the aggregate, but from the principal causes also. Towards the close of his term of office Dr. Ogle made arrangements for the Census taking of 1891, and superintended the actual enumeration in that year, although, in view of the age limitation of service, he was not permitted to complete the Census reports. The arrangements, however, projected by him for the discharge of that duty by his successor were highly successful, and were gratefully acknowledged by Dr. Tatham, who, in the preface to his decennial supplement, attributes to Dr. Ogle's thoughtfulness and foresight the preservation of Census data without which the subsequent elaboration of occupational mortality statistics in 1890–1–2 could never have been accomplished.

Although in issuing his annual report for 1881 Ogle discontinued his predecessor's practice of authenticating an annual letter to the Registrar-General on the causes of mortality, it is nevertheless generally understood that the Medical Superintendent of Statistics is, by virtue of his office, responsible for the accuracy of the reports authorised by his chief. Dr. Ogle may therefore be regarded as the writer of the entire series of reports issued by the Statistical Department during his tenure of office. In the new series of reports beginning with the Census year considerable changes appear. In the volume for 1881 departure was made from the tabular forms long previously made for the classification of causes of death, a new series of tables being devised by Dr. Ogle. The classification thus introduced was based on etiological rather than on pathological considerations, the former being thought better adapted than the latter for the use of those engaged in designing methods of prevention. This new arrangement followed the lines adopted by the Royal College of Physicians of London in the nomenclature at that time in process of revision.

A complete set of the Registrar-General's reports occupies a place on our bookshelves, and in those relating to the years from 1880 to 1893 we find a succession of articles on preventive topics, the mere enumeration of which would occupy more space than can now be spared. Among the more important of Ogle's contributions to sanitary science from the statistical standpoint may be noticed some instructive articles on the geographical distribution, as well as on the age and sex incidence, of cancer, tuberculosis, diabetes, small-pox, enteric fever, and other common infectious diseases, for the designation of which the term "specific febrile" was suggested as more appropriate than the term "zymotic." The subject of vaccination is, of course, frequently discussed, and its practice stoutly defended. An article, which will still repay perusal, on the effect of compulsory education on the health of school children is contained in the report for 1882, and in the report for the succeeding year the question of the real, as opposed to the apparent, increase of malignant disease in this country is ably discussed. The destruction of stray curs as a preventive measure against hydrophobia is strongly advocated in the report for 1886. The volume for the following year is noteworthy as containing an instructive account of "Fifty Years of Civil Registration," the year 1887 being the fiftieth since the inauguration of registration in this country. Interesting details are given of the opposition encountered by the Registration Act of 1837, on the ground that, *inter alia*, registration would interfere with the privacy of family life. The chief opponents were the clergy, who feared lest the uneducated classes should be led by it to neglect baptism, taking the registration of a birth to be a substitute for that rite. In the report for 1881 particulars are given of an attempt, first made in that year and continued subsequently, to improve the certification of causes of death by sending official letters of inquiry to medical certifiers asking for additional information in cases where the cause of death had been incorrectly entered in the death certificate. This is still recognised as a most effective means of obtaining increased precision in the statement of death causes for the purpose of national registration, and the credit for its adoption is due to Ogle. In addition to his definitely official work, Dr. Ogle was a frequent contributor to the *Journal of the Royal Statistical Society*. In 1893 he served as a member of the Royal Commission on Metropolitan Water-Supply. He gave evidence before the Vaccination Commission in 1889; before the Census Committee of 1890, and before Sir Walter Foster's Select Committee on Death Certification in 1895.

Dr. Ogle married a daughter of Mr. A. Block, of Highgate, and sister of the Rev. E. Block, sometime vicar of Hook, Surbiton. He leaves no family. The funeral took place at Golder's Green on April 16th.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. Richard Frommel, formerly professor of gynæcology in the University of Erlangen, aged 62. He had previously been assistant to Professor Schroeder in Berlin. About 11 years ago he resigned his chair and migrated to Munich, where, in concert with the late Professor von Winckel, he founded the Gynæcological Society. He was editor of the *Jahresbericht* of gynæcology and midwifery, and published a good many papers on these subjects.—Dr. Egmont Baumgarten, *privat-docent* of laryngology in the Budapest University, aged 52, in consequence of septicæmia following a bite on the finger during an operation on a little girl's throat.

THE NATIONAL INSURANCE ACT.

IN our Parliamentary Intelligence this week will be found a full report of Sir Philip Magnus's speech in the House of Commons on April 18th with regard to the medical position under the National Insurance Act, and of the reply given by Mr. C. F. G. Masterman, Secretary to the Treasury. Sir Philip Magnus criticised the manner in which the measure had been drafted practically without reference to the medical profession, and had become law in a form contrary to the wishes and interests of that profession. He also blamed the Commissioners for the inadequate and unsatisfactory way in which they had so far dealt with the strong representations made to them by medical bodies. He declared that an arrangement between the Commissioners and the medical profession was no nearer in sight now than it was last August, and he ridiculed the suggestion that a scheme of national health insurance might in the last resort be brought into operation without the inclusion of medical benefits. Mr. Handel Booth, in the course of a speech in favour of the Act, said that the medical men of a certain district in Yorkshire had lately competed in a body for a vacant post in the gift of a Friendly Society at 2*s.* 6*d.* per head per annum. This statement has since been denied by several local practitioners in the columns of the *Yorkshire Post*. Mr. Masterman, in his reply, avoided for the most part the subject of medical benefits, deferring his answer to the various detailed professional criticisms until a future debate. But he made curious references to "the great statutory body which represented the medical profession." If by that term he meant the General Medical Council his allegation was obviously incorrect. The debate took place upon an amendment by Mr. Rupert Gwynne proposing to defer the working of Part I. of the Act. The amendment was lost by 205 to 147 votes.

BRITISH MEDICAL ASSOCIATION.

A meeting of the State Sickness Insurance Committee was held on April 18th, under the chairmanship of Mr. T. J. VERRALL.

The committee resolved to call the attention of the Insurance Commissioners to the following points: (1) Special visits—that is, visits made in response to, and on the same day as, calls received after 10 A.M., or made on Sundays at the desire of the insured person—should, in the committee's opinion be extras; (2) the need for a definition of the word "misconduct" occurring in Subsection 14 (4) of the Act, and the desirability or otherwise of any of the diseases in the definition being held to be an extra; (3) the present procedure of Friendly Societies in admitting new members without medical examination is undesirable, and the committee recommends that there should be a fee for the medical examination of an insured person desirous of joining an approved society; (4) the Association has approved the principle of compensation of medical practitioners in cases where loss of goodwill, &c., has been proved.

The committee conferred with the President, Dr. A. Routh, and one of the honorary secretaries, Dr. W. W. H. Tate, of the Obstetrical and Gynæcological Section of the Royal Society of Medicine, with reference to the probable effect of the provisions as to maternity benefit contained in the Insurance Act, and in the Model Rules issued by the Insurance Commissioners upon the teaching of clinical midwifery. Dr. Routh stated that the section had been in communication with the English Insurance Commissioners with reference to the meaning and intention of the Model Rules, and that the Commissioners had suggested an interview between representatives of the section and one or more of the Commissioners for the purpose of considering the various aspects of the matter involved. Dr. Routh said that before accepting this invitation the section desired to earn the views of the State Sickness Insurance Committee.

It was reported that the meeting of the Joint Advisory Committee, summoned for April 26th, had been postponed, and would probably not be held until a fortnight after that date. The committee expressed its readiness to meet in conference, immediately before the first meeting of the Advisory Committee, those medical members of the Advisory Committee nominated by the Insurance Commissioners.

Medical News.

SOCIETY OF APOTHECARIES OF LONDON.—At examinations held recently the following candidates passed in the subjects indicated:—

Surgery.—L. K. Edmeades (Sections I. and II.), Guy's Hospital; C. W. Jenner (Section II.), London Hospital; H. Robinson (Sections I. and II.), Manchester; C. B. Welsby (Sections I and II), London Hospital; and H. D. Willis (Sections I. and II.), Manchester.

Medicine.—H. Cox (Section II.), Birmingham; E. B. Keen (Section II.), Charing Cross Hospital; P. McGinnis (Section II.), Dublin; C. B. Welsby (Section II.), London Hospital; and H. D. Willis (Sections I. and II.), Manchester.

Forensic Medicine.—W. C. Himely, Paris and Middlesex Hospital; and C. de C. W. Langdon and A. H. Macklin, Manchester.

Midwifery.—J. A. A. Boddy, Manchester; R. B. F. Frazer and R. Jones, Charing Cross Hospital; and R. V. Martin, St. Mary's Hospital.

The diploma of the Society was granted to the following candidates, entitling them to practise medicine, surgery, and midwifery:—L. K. Edmeades, E. B. Keen, P. McGinnis, C. B. Welsby, and H. D. Willis.

FOREIGN UNIVERSITY INTELLIGENCE.—*Berlin:* Dr. K. Bonhöffer, Professor in Breslau, has been appointed to the chair of Neurology and Psychiatry, in succession to Dr. Ziehen, who is retiring. Dr. Hans Burghart, Senior Physician to the Elisabeth Hospital, has been granted the title of Professor.—*Bonn:* Dr. Wilhelm Heuck has been recognised as *privat-docent* of Dermatology and Syphiligraphy.—*Gratz:* Dr. Max Stolz, *privat-docent* of Gynæcology, has been granted the title of Extraordinary Professor.—*Halle:* Dr. Hans Fielitz has been appointed Oberarzt of the Surgical side of the Deaconess Hospital, in succession to Dr. Genzmer, who is retiring.—*Kazan:* Dr. Vishneffski has been appointed to the chair of Surgery.—*Kiel:* Dr. W. Birk has been recognised as *privat-docent* of Pædiatry.—*Königsberg:* Dr. Kisskalt, of the Berlin Hygienic Institute, has been offered the chair of Hygiene, in succession to Dr. Martin Hahn.—*Lemberg:* Dr. Z. von Dmochowski, of Warsaw, has been appointed to the chair of Pathological Anatomy.—*Moscow:* Dr. Zirn, *privat-docent*, has been appointed to the chair of Surgery.—*Munich:* Dr. A. Kantorwicz has been recognised as *privat-docent* of Odontology.—*Rome:* Dr. Francesco Giannuli has been recognised as *privat-docent* of Neurology and Psychiatry.—*Rostock:* Dr. Adolf Kühn, *privat-docent* of Medicine, has been granted the title of Professor.—*Siena:* Dr. Onofino, of Sassari, has been appointed Extraordinary Professor of Neurology and Psychiatry.—*Strasburg:* Dr. H. Vogt, *privat-docent* of Children's Diseases, has been granted the title of Professor.—*Vienna:* Dr. A. Haberda, Extraordinary Professor of Forensic Medicine; Dr. J. Schiff, Extraordinary Professor of Odontology, and Dr. N. Neüberger, Extraordinary Professor of the History of Medicine, have been promoted to the title and rank of Ordinary Professor. Dr. Friedrich Reuter, *privat-docent* of Forensic Medicine; Dr. J. Rothberger, *privat-docent* of General and Experimental Pathology; and Dr. L. Ritter vom Zumbusch, *privat-docent* of Dermatology and Syphilis, have been promoted to Extraordinary Professorships. Dr. K. Ewald, *privat-docent* of Surgery; Dr. E. Schwarz, *privat-docent* of Medicine; Dr. M. Hajek, *privat-docent* of Laryngology; Dr. J. Neumann, *privat-docent* of Gynæcology; Dr. V. Hammerschlag, *privat-docent* of Otology; Dr. W. Türk, *privat-docent* of Medicine; Dr. R. Weiser, *privat-docent* of Odontology; Dr. A. Fuchs, *privat-docent* of Neurology; Dr. H. Salomon, *privat-docent* of Medicine; Dr. P. Clairmont, *privat-docent* of Surgery; and Dr. F. Kermauner, *privat-docent* of Gynæcology, have been granted the title of Extraordinary University Professor.

THE HEALTH OF TORQUAY.—The medical officer of health of Torquay, Dr. T. Dunlop, in his annual report for 1911, states that during the year the death-rate was 14·1 per 1000, being 0·8 per 1000 higher than the average for the past five years. The infantile mortality was 117 per 1000 births and the zymotic death-rate was 1·7 per 1000, being higher than in the previous year, and was principally due to the epidemic of measles. During the year 102 cases of infectious disease were notified. 35 deaths were due to pulmonary tuberculosis, as against 57 in 1910. 53 deaths were caused by cancer. Dr. Dunlop urges the importance of vaccination and alludes to the increase of vaccination exemptions, 41 being granted in 1907, whereas in 1910 the number was 197. He also drew attention to the need for a public abattoir.

THE BRISTOL HEALTH COMMITTEE AND LADY MEDICAL INSPECTORS.—The Bristol city council having decided to appoint two lady health visitors to work under the Notification of Births Act and to carry out other functions of a like nature, and a lady medical inspector to supervise these visitors and the midwives, offered the salary of £100 per annum for the latter post. In view of the hours of work apparently required this was considered inadequate by the medical profession, and the health committee of the city council finding itself without applicants, decided to reconsider the matter. The committee also resolved not to pay the expenses of those candidates who had come from a distance, but was advised that it was legally responsible. The difficulty arises out of the indefiniteness of the statement of the amount of work required for £100 a year.

NATIONAL HEALTH WEEK.—A central committee, consisting of medical officers of health, representatives of health societies, and others, has been formed under the chairmanship of Professor A. Bostock Hill, with the object of holding a National Health Week from April 28th to May 4th and thus focussing public attention on matters connected with health and hygiene. A letter on this subject appears in THE LANCET of March 30th, p. 896. Full programmes for the week have been arranged in many of the metropolitan boroughs and in 26 of the great towns; while over 100 other towns will carry out partial programmes. The local arrangements in most cases have been made under the direction of the mayor or of the medical officer of health. The programme includes sermons to be preached in places of worship, town meetings, addresses and lectures, cinematograph exhibitions, visits to public works, health exhibitions, and demonstrations of cooking. Further particulars can be obtained at the offices of the Central Committee, 28, Fleet-street, London, E.C.

WINSLEY SANATORIUM: ANNUAL REPORT.—This institution, established and maintained by the three counties, Somerset, Gloucester, and Wilts, has treated 1561 patients since its foundation seven years ago, the total for 1911 being 269. Out of a total of 69 beds available for use, 64·5 were on a daily average in occupation. During the year 266 patients were discharged; of these, 46·6 per cent. were fit for some work at the time of discharge, and a further 33·4 per cent. showed some improvement. The average duration of each patient's sojourn in the institution was 86 days, and the average weekly cost of each in-patient 25*s*. The total ordinary expenditure was £4193 and the total ordinary income £5683. There is a balance in hand of about £4000 towards the sum of £9000 which represents the estimated cost of the projected extensions. These extensions will provide 30 additional beds, with new quarters for the resident medical officer, and accommodation for an assistant medical officer. Of the 70 beds at present in existence 56 are maintained by individuals, local authorities, friendly societies, and so on. The medical officer's report remarks upon the

frequency of bad teeth in consumptives and their importance in treatment.

ROYAL INSTITUTION.—On Tuesday next, April 30th, at 3 o'clock, Mr. F. Balfour Browne will begin a course of two lectures at the Royal Institution on "Insect Distribution, with Special Reference to the British Islands"; on Thursday, May 2nd, Professor J. Norman Collie will give the first of two lectures on "Recent Explorations in the Canadian Rocky Mountains"; and on Saturday, May 11th, Mr. H. Plunket Greene will begin his course of three lectures on "Interpretation in Song," with vocal illustrations; Mr. S. Liddle will be the accompanist. The Friday evening discourse on May 3rd will be delivered by Mr. W. C. Dampier Whetham on "The Use of Pedigrees," and on May 10th by Professor William Stirling on "The Gaumont Speaking Cinematograph Films," illustrated by the aid of M. Gaumont.

LITERARY INTELLIGENCE.—Messrs. Baillière, Tindall, and Cox announce the following works for immediate publication:—"Foods: their Origin, Composition, and Manufacture," by William Tibbles, LL.D., M.D., medical officer of health, Melton Mowbray; a "Prescribers' Formulary and Index of Pharmacy," by Thomas P. Beddoes, M.B., F.R.C.S., surgeon, London Skin Hospital and Westminster General Dispensary; a new work on "Systematic Case-Taking," by H. L. McKisack, M.D., physician, Royal Victoria Hospital, Belfast; a third edition of "Anæsthetics," by J. Blumfeld, M.D., senior anæsthetist, St. George's Hospital; and a second edition of "Syphilology and Venereal Disease," by G. F. Marshall, M.D., F.R.C.S., surgeon to the British Skin Hospital, &c.—A copy of Mr. C. E. Stromeyer's book "Unity in Nature," which we reviewed in THE LANCET of Jan. 13th, p. 100, has been graciously accepted by His Imperial Majesty the German Emperor, who has sent the author an acknowledgment of the work through His Excellency Count Wolff-Metternich, German Ambassador in London.

AUSTRALIAN INSTITUTE OF TROPICAL MEDICINE.—In another column the Australian Institute of Tropical Medicine is inviting applications in connexion with the appointment of three new officers, one to be a laboratory expert capable of taking charge in the absence of the director, the second to be an expert in tropical hygiene and epidemiology, and the third to be a bio-chemist. This is the outcome of the large increase of endowment recently granted by the Commonwealth Government. Extensive new laboratories are in process of erection at Townsville, Queensland, and special wards have already been equipped in the Townsville Hospital. The first report of the director, Dr. Anton Breinl, is full of hopeful augury. An Australian Diploma of Tropical Medicine is being established simultaneously by the Universities of Sydney, Melbourne, and Adelaide, the bulk of the teaching being entrusted to the institute. The affairs of the institute are supervised by a committee, including representatives of the Governments of the Commonwealth and of Queensland and the Universities of Sydney, Melbourne, Adelaide, and Brisbane.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

The Inebriates Bill.

THE Government hoped to obtain the second reading of the Inebriates Bill on Tuesday, April 23rd, but the discussion of other matters prevented the debate on it concluding. However, so far as it went, the trend of the debate was distinctly in favour of the principles embodied in the measure. Mr. ELLIS GRIFFITH, the Under Secretary of State for the Home Department, explained the proposals of the Bill. He said that the great mass of evidence accumulated since 1898 pointed to the necessity of amending legislation, and the provisions of the Bill followed the recommendations of the departmental committee which investigated the operation of the Inebriates Act in 1908. The Bill provided one set of provisions for inebriates who had committed no offence, and another for criminal inebriates. With a view to improving the supervision and after-care of inebriates the Bill provided for a period of probation after their release from detention. One of the principal reasons why the present law was inadequate was the lack of reformatory accommodation. Under the Bill an obligation to provide institutions was imposed upon the local authority. The Government proposed to help them by a Treasury grant towards the cost of maintenance. He pointed out to the House that a new definition of "intoxicants" was introduced into the Bill. It henceforward would include any intoxicating liquor, and any sedative, narcotic, stimulant drug or preparation. Morphia, cocaine, and similar drugs would come within the definition of that clause.

Midwives (Scotland) Bill.

Mr. BARNES has introduced in the House of Commons a Bill "to secure the better training of midwives in Scotland and to regulate their practice." It was read a first time.

HOUSE OF COMMONS.

WEDNESDAY, APRIL 17TH.

Forcible Feeding of Prisoners.

Mr. FLETCHER asked the Secretary of State for the Home Department whether he would reconsider his view as to the necessity of forcible feeding of prisoners.—Mr. MCKENNA replied: The forcible feeding of prisoners is a matter of necessary medical treatment carried out in accordance with the law as laid down by the High Court. If the honourable Member can suggest any better means for preserving the life of a prisoner who refuses to take food in the ordinary way I shall be most happy to consider it; but it must be made plain to him that it is impossible to allow any prisoner to determine the length of his own sentence by setting him at liberty if he chooses to refuse food for a few days. We have a careful report of each case from the medical officer as to whether the prisoner is in a suitable state of health, and whenever the medical officer reports that he is not in a suitable state of health the prisoner is discharged at once. That would apply to all classes of offences.

THURSDAY, APRIL 18TH.

The Administration of the Insurance Act.

On the motion that the Speaker should leave the chair in order that the House should go into committee on Civil Service Estimates,

Mr. RUPERT GWYNNE called attention to the administration of the Insurance Act and moved the following amendment:—

"That this House is of opinion that the methods adopted and the steps taken to bring into operation Part I. of the National Insurance Act, 1911, are unsatisfactory, and that owing to the delay in establishing the Advisory Committee and framing regulations, and in establishing the Insurance Committees and District Committees, and in making arrangements for providing medical benefits, and in settling schemes for disposal of the present funds of Friendly Societies under Section 72 of the Act, and in ascertaining and making known the alternative benefits under Section 13 of the Act, the date of commencement of Part I. of the Act ought to be deferred so as to enable societies to organise their future business on a proper footing, and so as to give insured persons a reasonable time within which to make their arrangements."

Sir PHILIP MAGNUS, in seconding the amendment, said that he would limit his speech to the question of the arrangements so far made with regard to medical benefits. It was incomprehensible to him that this Act should have been drafted practically without reference to the members of the medical profession without whose coöperation it could not possibly work. Yet that unfortunately was the case, and that was the reason of the long delay of bringing it into operation. It was only a few days ago, on April 12th, four months after the Act was passed, that a meeting was held of the Scottish Medical Insurance Council, and this was the resolution which it passed:—

"That this body, elected by the whole of the medical profession of Scotland, and representing all branches of the profession, desires to place on record on the occasion of its first meeting its complete sympathy with the widespread dissatisfaction and regret that the profession should not have been adequately consulted at any stage, with regard to the provisions of a measure introduced ostensibly in the interests of public health."

Not satisfied with passing that resolution, the meeting went further:—

"The meeting further approved of the proposal that in the event of the possibility of the seven cardinal principles approved and adopted not being incorporated in the regulations issued by the Commissioners, the executive of the Council should at once take steps to prepare a scheme for a public medical service adapted to the circumstances of the various areas in Scotland to be organised and carried out by the profession."

That was to say that the medical profession in Scotland proposed to contract themselves out of the operations of the Act, because the machinery under which it was proposed to be carried out was so impossible to work. It was not satisfactory that a great body of medical men only a few days since should feel bound to pass such a resolution as that. It would be remembered that in August last he moved an amendment to the Insurance Bill with the object of giving effect to some of the cardinal points raised by the medical profession and regarded by them as essential for securing their coöperation in bringing the Act into operation. The Chancellor of the Exchequer met that with an absolute *non-possumus*, and he expected to override the wishes of the whole of the medical profession by Act of Parliament, and they would be compelled to come in under the machinery of the Act, but from that time until the present the medical profession had held out for the granting of these very amendments which he (Sir P. Magnus) moved in August last, and they had not yet been granted. If these amendments had then been adopted by the Chancellor of the Exchequer, this Act, so far as its medical benefits went, would have come into operation, with the whole of the medical profession willing to come in. So far a settlement had not yet been reached with the medical profession on the points by virtue of which they were willing to coöperate. What had been done? Large sums of money had been expended, innumerable committees had been set up, secretaries and clerks and lecturers and persons of all descriptions had been appointed at enormous cost to the country, while the particular persons who were alone able to work this part of the Act were not in coöperation with it at all. At the present moment, the rate of remuneration paid to the members of the medical profession had not been settled either in the Act or by the Commissioners. He thought it ought to be known that the very actuarial calculations on which the Bill was based would probably be

found to be entirely inaccurate, because they had proceeded on the assumption that the members of the medical profession would be willing to give medical attention for less sums than they were prepared to accept. He had only recently been informed that a very much larger sum of money than that, which had been calculated amounting to more than hundreds of thousands of pounds, would be required to satisfy the legitimate requirements of the medical profession before this Act could be brought into operation. Perhaps the Secretary to the Treasury would be able to tell the House—and this information would really be useful to the medical profession—whether the Chancellor of the Exchequer intended to devote a portion of the £6,000,000 surplus which he had at present to provide sufficient remuneration for members of the medical profession to enable the Act to come into full operation. With a view of indicating the terms under which the medical profession was willing to coöperate in the working of the Act the British Medical Association on Feb. 29th wrote a letter to the Insurance Commissioners in which it stated—

"That while the British Medical Association is willing that members of the medical profession shall provisionally join the Advisory Committee, nevertheless it will use its best endeavours to ensure their resignation unless the six cardinal principles have been granted by amendment of the Insurance Act, by regulation, order, or otherwise, and that it be an instruction to the Council to provide that all practitioners who are supported by the association for membership of the Advisory Committees shall have pledged themselves previously to vacate their seats if elected should the British Medical Association determine to cease negotiations with reference to the National Insurance Act."

One would think that that would have received an immediate reply, but, on the contrary, it was merely acknowledged by the Insurance Commissioners, but when he on March 20th asked the Secretary to the Treasury whether the Insurance Commissioners would issue such regulations as would enable them to give effect to the requirements of the medical profession, the honourable gentleman stated that "the letter of Feb. 29th has been acknowledged. No regulations have, however, yet been considered by the Joint Committee on this matter, as they recognise that this is essentially a subject in which the advice and assistance of the Advisory Committee are advisable." He wanted to know whether the Commissioners or the Health Committees had power under the Act to grant the requirements of the medical profession, and the answer given by the Secretary to the Treasury, when he (Sir P. Magnus) proceeded to question him as to whether he could answer that, was, "I think not in question and answer." He now would press the honourable gentleman to say distinctly whether the Commissioners had power under the Act to grant the requirements of the medical profession in order that the Insurance Act might at any time be brought into operation. If they had not that power, of course it would be necessary to have an amendment to the Act before that result could be arrived at. He should like to point out that the members of the British Medical Association expressed themselves quite willing to appoint members to this Advisory Committee, and that Advisory Committee had already been set up. Of course, it was a very large committee consisting of 161 members. He did not think that it had met yet, but there were 33 medical members. The excuse for the delay in acknowledging the letter sent by the medical profession to the Commissioners on Feb. 29th was that they were unable to do so or that they were waiting until the Advisory Committee had been set into operation.

Mr. MASTERMAN: No letter has been received which has not been acknowledged by the Commissioners.

Sir PHILIP MAGNUS: I did not say that. I have already stated that the letter has been barely acknowledged, but no answer has been given to the letter itself. The honourable gentleman (Sir Philip continued) knew as well as he did that the Advisory Committee could not negotiate on behalf of the medical profession, and all that it could do was to advise the Commissioners or the Joint Committee of the various Commissioners in various parts of the kingdom. All it could do was to advise the Joint Committee in regard to what the medical profession might require, but as regarded negotiating he might tell the honourable gentleman, who was vice-chairman of this Advisory Committee, that the medical members of that committee would not in any way be empowered to negotiate on behalf of the British Medical Association itself. These proceedings had been going on until the present time, and in answer to a letter the secretary to the Joint Committee of the National Health Commissioners wrote on April 15th as follows:—

"I am directed by the National Health Committee and the Insurance Joint Committee to acknowledge the receipt of your letter of the 12th inst., and to state that all such representations as those of the British Medical Association conveyed in your letter of Feb. 29th will be carefully considered in connexion with the preparation of the regulations for the administration of medical benefit. The preparation of those regulations is at present under the consideration of the Joint Committee, and it is hoped that it may be practicable at an early date to obtain in that preparation the advice and assistance of the Advisory Committee recently formed, to which, as you are aware, representatives of your association have been appointed."

It was now April 18th, and evidently an arrangement was no nearer being made now than in August last, between the Commissioners appointed to carry this Act into operation and the members of the medical profession without whose assistance the Act could not possibly be carried out. He thought that what he had said justified a great part of the amendment which he was now seconding. Let the House consider what further statement had been made by the secretary to the Treasury. When the facts were brought under his notice by questions across the floor of the House, he finally took refuge in the statement that even if there were no medical benefits the Insurance Act would come into operation. That was really the most remarkable statement that had ever been put forward in connexion with this Act, and he would be very glad if the honourable Member would inform the House what it meant. It meant nothing less than trying to perform *Hamlet* without the Prince of Denmark. How was it possible to arrange for the prevention of disease and illness unless the coöperation of the members of the medical profession was secured? The answer which had been given a few days before was that if the medical profession refused to coöperate the Insurance Committees would be able to pay to the insured person the sum equivalent to what the medical benefits would cost. How could it be ensured that this money collected from the pockets of both workmen and masters and contributed to by the State for the purpose of medical benefit would be used for that purpose? It might be used for any other purpose and not necessarily for medical benefit. He thought that he had justified the words of the amendment now before the House. He trusted that the secretary to the Treasury would be able to give a satisfactory answer to the questions which he had put to him.

Mr. BOOTH thought that the member for the University of London (Sir Philip Magnus) had overstated the case when he said that if the medical benefits were taken out of the National Insurance Act it would be like *Hamlet* without the Prince of Denmark. The Friendly Societies and those who were seeking to become approved societies did not take the view of the honourable Member at all, and if an announcement could be made throughout the country that the medical benefits would be dropped—he hoped that the Commissioners would not be driven to take that course—it would be hailed in the majority of cases with delight. It was just as well that the members of the medical profession should remember that. They might have heard it, but they generally forgot it when they made their speeches. The simple course would be to hand the money over to the societies so that they could continue to make arrangements for the medical treatment of their members as they did now. They could do that now for an average price of from 2s. 6d. to 3s. per head per annum, so that they would surely not have any difficulty when they had 6s. per head per annum at their disposal. A question was put from the opposite benches a few weeks ago with regard to a place near Leeds where the doctors held a meeting, and where some meetings of the Friendly Society were held. The society at the very place honourable gentlemen opposite had selected had had to renew its appointment of its medical officer, and every medical man in the district applied to serve, although the remuneration was only 2s. 6d. per head per annum, and although the district was not a very salubrious one. He would venture to point out that medical men should not sign petitions indicating that they regarded poverty as certain if they agreed to work for 6s. per head per annum, and then all unanimously compete for these posts giving only 2s. 6d. That was a point which he invited those who spoke for the doctors to clear up. The view of the Conservative party on the question of the medical men underwent a great change after the Bill was through and they discovered the electioneering power of the doctor on his visits.

Mr. GOLDSMITH said that he had been asked by members of Friendly Societies in the country what was going to happen to members who were over 70 years of age. At present the man over 70, who was a member of a society, got his sick pay and his medical attendance. Under the Act a man was no longer insured as soon as he reached the age of 70—that was to say, that he was not going to get sick pay, although he was still going to get medical attendance. Where was the money to come from to provide for these men when they reached the age of 70?

Mr. CASSEL said that the House had had a practical admission by the Secretary to the Treasury that the Commissioners were not yet in a position to give the sanatorium benefit. What right had the Government to take a single 4d. during the first six months if they were not in a position to give the only available benefit to which, during those six months, the insured persons were entitled under the provisions of the Act? The Commissioners ought certainly under no circumstances to put the Act into operation until they were able to give the only benefit available during that period. Would the Commissioners be able to give medical benefit after six months? The Commissioners were unable to give medical benefit unless they were able to make terms with the medical profession. It was a fraud to make anybody pay for sanatorium benefit when the Government were not in a position to give that sanatorium benefit, and in the second place it was a fraud to make them pay for medical benefit until the Government had satisfied themselves that they were able to give them doctor and medicine except in special circumstances.

Mr. MASTERMAN (Secretary to the Treasury), replying to the debate, said that he would first deal with sanatorium benefits. The conditions as regarded sanatorium benefits and the reason why the Government had asked that they should be given six months before the ordinary benefits were very fully set out by the Chancellor of the Exchequer in the course of his speeches on the subject in debates in the House. So far as the Government knew, they could not have full sanatorium benefits such as would be obtained when the Act was running, but that was no reason why people between July 15th and Jan. 15th should have any benefits which it might be possible to give put off. Sanatoria as defined by the Act—and its interpretation was amplified by an important committee now sitting on the subject, the chairman of which was the Member for Plymouth (Mr. Astor)—was much wider and dealt with a more varying course of health than the mere sending of patients to sanatoriums, and so far from despairing of the Commission being able to provide a very considerable amount of help in those cases, the honourable Member would find that before July 15th they would be able to lay before him a system largely outlined by the Commission in its reports, which would grow and would give immediate and practical relief to some of the most unfortunate of the insured persons, of which they might be for ever deprived if the Act was put off. That was all that the Government had promised to give, and that was all that the Commissioners would be able to give. Besides sanatorium benefit the only immediate questions which had to be settled were questions dealing with contributions. Some other questions would not have to be settled before July, although they would have to be settled before January. The delay in the formation of the Advisory Committee (Mr. Masterman proceeded to say at a later stage of his speech) was entirely due to one fact. The Commissioners made preparations for forming the Advisory Committee almost in the first week of their appointment, but the Advisory Committee did not consist of persons appointed by the Commissioners, but of the representatives of various classes of persons, although a few were appointed by the Commissioners. The reason that this delay had occurred had been entirely owing to the delay in regard to the appointments made by the various bodies who were entitled to appoint representatives. Immediately all those representatives were nominated and selected the names of the Advisory Committee were published. With regard to this question of delay, let him make one further remark, which he did not make in any hostile sense but in reply to the criticisms of the seconder of the amendment. He did not now want to deal with the medical benefits. In the first place he had not got the time to do that at present, and in the second place he understood that there was going to be a debate on this question upon a motion to be made at an early date. He understood

that there was a private Member's motion down dealing with these medical benefits. Perhaps it would be better to defer his observations until then. He would, however, like to make this challenge to the honourable Member for the University of London. That honourable gentleman complained that there had been delay in the negotiations with the medical profession concerning the medical benefits. Were the Insurance Commissioners responsible for that delay? The first act of the Commissioners when they came into power was to invite representatives from every class that would be affected by this Act to confer with them to see what sort of regulations could be made and to see how their special difficulties could be met. Every class affected by the Act responded to that invitation, employers and employed alike, except one, and that class was the official representatives of the medical profession of this country. Fortunately, he thought, because he very strongly wanted to see peace in this matter—so far as one of the main bodies were concerned, the British Medical Association, the wiser counsels of moderate opinion prevailed against some opposition. The Commissioners were only asked to postpone a conference with them and they decided to nominate and had now nominated members on the Advisory Committee. As far as the great statutory body which represented the medical profession was concerned, they in their wisdom considered it best to meet the invitation of the Insurance Commissioners with the statement that in no circumstances would they discuss anything in connexion with the Act with them. After that, and after the attempt was made, the Insurance Commissioners were blamed because there had been delay in the negotiations.

An honourable Member: No, we blame the Government.

Mr. MASTERMAN: Perhaps the honourable gentleman will explain that somewhat incomprehensible ejaculation afterwards. The administration of the Insurance Act was in the hands of the Insurance Commissioners, and if the great statutory body of the medical profession thought that their demands could not have been granted by the Commissioners, there was no reason why they should not have come to a conference to see why they could not be granted. Of course there had been delay and there must of necessity be delay in dealing with the subject. He hoped now that the Advisory Committee had been set up containing a very full representation of the various classes and varieties of medical practice in this country there might be possible some rational conversation and some rational understanding. He would, with the permission of the House, defer any further remarks he could make on medical benefits until the debate on the subject, which would soon be raised on a private Member's motion.

The further debate on the amendment was adjourned.

MONDAY, APRIL 22ND.

Sanatoriums Benefit.

Mr. HUNT asked the Secretary to the Treasury whether, in view of the fact that there were about 300,000 people in the United Kingdom suffering from consumption every year, he could say how many consumptive people would have been provided with beds in Government sanatoriums at the end of three years after the National Insurance Act had come into operation.—Mr. MASTERMAN replied: I have no reason to anticipate that within the period named by the honourable Member beds will not have been provided in sanatoriums for all cases for which such treatment is found necessary. Other forms of treatment, either institutional or otherwise, will be provided for other cases according to their respective requirements. I should add that the Act does not contemplate the provision of sanatoriums by the Government, but by the county councils and other local bodies with the assistance of the grant which Parliament has made for the purpose under the conditions laid down in Section 64 of the Act.

Mr. WRIGHT asked the honourable gentleman what was the nature of the special sanatorium benefit, other than treatment in sanatoriums not there provided, which he hoped would be available for assured persons entitled to such benefit on July 15th, 1912.—Mr. MASTERMAN answered: Arrangements are under consideration for giving from July 15th onwards to insured persons suffering from tuberculosis who are not treated in sanatoriums, such special treatment in other institutions or otherwise as their cases severally require. No announcement, however, as to the precise character of these arrangements can usefully be made pending the consideration of the report of the Tuberculosis Committee, the issue of which is expected within the next few days.

TUESDAY, APRIL 23RD.

The Remuneration of Vaccination Officers.

Mr. PETO asked the Prime Minister whether, in view of the loss of income suffered by vaccination officers in consequence of the Vaccination Act and Order, 1907, and the decision of the Local Government Board not to issue a general order with regard thereto, and the financial difficulties in which many of these vaccination officers were now placed in consequence of the increase of exemption certificates received by them, he would arrange an early date for the consideration of the estimates of the Local Government Board; and, if so, what would be a convenient date for this purpose.—Mr. LLOYD GEORGE (on behalf of Mr. ASQUITH) replied: The suggestion of the honourable Member will be considered along with the numerous requests for the consideration of other votes.

Stoke-on-Trent and National Insurance.

Mr. JOHN WARD asked the President of the Local Government Board whether it was the intention of his department to grant an interview with the health committee of the Stoke-on-Trent corporation to discuss a scheme for providing sanatoriums, dispensaries, health visitors, &c., under the National Insurance Act, 1911, within their own area, before deciding upon the proposals upon this subject already made to his department by the Staffordshire county council.—Mr. BURNS wrote in reply: An interview has been arranged for to-morrow. I may add that the county council of Staffordshire has not yet submitted a scheme to the Local Government Board.

WEDNESDAY, APRIL 24TH.

The Administration of the Insurance Act.

The House resumed the debate on Mr. Rupert Gwynne's amendment on the administration of the Insurance Act (adjourned from Thursday, April 18th).

In the course of the discussion Sir HENRY CRAIK said that the central point in regard to the Act was the improvement of the health of the people, and unless the Government came to an arrangement with the medical profession it could not carry that point. The Opposition had shown that the Government were trying to press down the working classes to one low level, and to force them to be treated by contract, a degrading system both to medical men and patients. If the Government would limit the contract system to those who earned less than £2 a week that would provide a satisfactory solution. That would leave the better portion of the working classes to make their own arrangements. The medical profession on their part would give most generous assistance to the poorest of the working classes.

Mr. MASTERMAN said in the course of his speech that he would defer what he had to say with regard to the medical profession until the debate next week. Generally he might, however, say that the Government would exhaust all possibilities of negotiation and agreement in order to produce as smooth and amicable a working of the normal system as was suggested in the Act. It was only if such negotiations proved impossible that the Government would put into force any alternative suggestions which the Act empowered the Commissioners to put into force. He was not without hope that as the result of investigation and negotiation some complete measure of agreement might be attained.

On a division the amendment was rejected by 205 votes to 147.

BOOKS, ETC., RECEIVED.

BAILLIÈRE, TINDALL, AND COX, London.

The Cause of Cancer. Being Part III. of "Protozoa and Disease." By J. Jackson Clarke, M.B., F.R.C.S., Senior Surgeon to the Hampstead and North-West London Hospital, and Surgeon to the Royal National Orthopædic Hospital; author of "Surgical Pathology and Principles" and other books. Price 7s. 6d. net.

EVANS, LEWIS, Victoria Printing Works, Rutland-street, Swansea.

The Hospitals of Wales. By G. Arbour Stephens, M.D. Lond., Associate of the University College of Wales, Member of the Swansea Board of Guardians. Price not stated.

KARGER, S., Karlstrasse, 15, Berlin.

Der Infantilismus, die Asthenie und deren Beziehungen zum Nervensystem. Von Prof. Dr. Paul Mathes, Privatdozent für Geburtshülfe und Gynäkologie an der Universität in Graz. Price M.6.

KIMPTON, HENRY, London. STENHOUSE, ALEXANDER, Glasgow.

The Surgery of Oral Diseases and Malformations, their Diagnosis and Treatment. By George Van Ingen Brown, D.D.S., M.D., C.M., Oral Surgeon to St. Mary's Hospital and to the Children's Free Hospital, Milwaukee; Professor of Oral Surgery, Southern Dental College, Atlanta. Price 23s. net.

LEWIS, H. K., London.

What to do in Cases of Poisoning. By William Murrell, M.D., F.R.C.P., Senior Physician to the Westminster Hospital. Eleventh edition. Price 3s. net.

Anæsthetics in Dental Surgery. By Frank Coleman, M.R.C.S., L.R.C.P., L.D.S., Assistant Dental Surgeon, St. Bartholomew's Hospital and the Royal Dental Hospital, and Harvey Hilliard, M.R.C.S., L.R.C.P., Anæsthetist to the Royal Dental Hospital. Price 7s. net.

LONGMANS, GREEN, AND CO., London, New York, Bombay, and Calcutta.

Quain's Elements of Anatomy. Eleventh edition. Editors: Edward Albert Schäfer, LL.D., Sc.D., M.D., F.R.S., Johnson Symington, M.D., F.R.S., and Thomas Hastie Bryce, M.A., M.D. In Four Volumes. Vol. II., Part I. Microscopic Anatomy. By E. A. Schäfer. Price 25s. net.

MALOINE, A., Paris.

Précis de Radiumthérapie. Par le Dr. J. Barcat, Assistant de Radiumthérapie de M. le Docteur Balzer à l'Hôpital Saint-Louis. Préface de M. le Docteur Balzer. Price Fr. 5.

METHUEN AND CO., LIMITED, London.

The Science of Hygiene. A Text-book of Laboratory Practice for Public Health Students. By Walter C. C. Pakes, D.P.H. Camb., F.I.C., late Demonstrator of Sanitary Science and Bacteriologist to Guy's Hospital, &c. New edition. Revised by A. T. Nankivell, M.D. (State Medicine), B.S. Lond., D.P.H. Camb., &c., Demonstrator of Public Health, King's College, University of London. Price 5s. net.

PHILIPPINE JOURNAL OF SCIENCE, Manila, P.I.

Report of the International Plague Conference held at Mukden, April, 1911. Price, cloth, $3.50; paper, $2.50. United States currency postage prepaid.

PHILOPOLIS PRESS, 406, Lincoln Building, San Francisco, California.

Spondylotherapy. Physio-therapy of the Spine based on a Study of Clinical Physiology. By Albert Abrams, A.M., M.D. (University of Heidelberg), F.R.M.S., Consulting Physician to the Mount Zion and French Hospitals, San Francisco. Third edition, enlarged. Price not stated.

REBMAN, LIMITED, London.

Hypnosis and Suggestion. Their Nature, Action, Importance, and Position amongst Therapeutic Agents. By W. Hilger, M.D. (of Magdeburg). Translated by R. W. Felkin, M.D., F.R.S.E. With an Introduction by Dr. Van Renterghem (Amsterdam). Translated by A. Newbold. Price 10s. 6d. net.

SCIENTIFIC PRESS, LIMITED, London.

Elements of Anatomy and Physiology. Especially adapted for Nurses. By W. Bernard Secretan, M.B. Lond., F.R.C.S. Eng., L.R.C.P. Second edition, revised. Price 2s. net.

The School Nurse, her Duties and Responsibilities. By C. Louis Leipoldt, F.R.C.S. Eng., Clinical Assistant, Victoria Hospital for Children. Price 2s. 6d. net.

SHAW AND SONS, 7 and 8, Fetter-lane, London, E.C.

Clinical Disorders of the Heart Beat. A Handbook for Practitioners and Students. By Thomas Lewis, M.D., D.Sc., M.R.C.P., Lecturer in Cardiac Pathology, University College Hospital Medical School, Physician to Out-patients, City of London Hospital for Diseases of the Chest. Price not stated.

STEINHEIL, G., Paris.

Kystes Hydatiques du Poumon. Par Pedro Escudero, Lauréat de l'Académie de Buenos-Aires (1910) et du Cercle Médical Argentin (1902), Médecin de l'Hôpital Rawson. Price Fr.6.

La Vie et les Maladies du Sang. Par le Dr. G. Froin, Ancien Interne des Hôpitaux de Paris. Price Fr.5.

Les Otites Moyennes et leur Complications. Par Pierre Descomps, Professeur agrégé des Facultées de Médecine, Chirurgien des Hôpitaux, et Paul Gibert, Ancien Assistant d'Oto-Laryngologie à l'Hôpital Lariboisière. Avec une Préface de P. Sebileau. Price Fr.6.

Travail du Laboratoire de M. le Professeur Hartmann. Essai sur l'Anatomie et la Médecine Opératoire du Tronc Cœliaque et de ses Branches de l'Artère Hépatique en Particulier. Par le Dr. P. do Rio-Branco (da Silva Paranhos), Ancien Interne des Hôpitaux de Paris. Price not stated.

Alliénistes et Philanthropes. Par le Dr. René Semelaigne, Ancien Interne des Hôpitaux de Paris et de l'Hospice de la Salpêtrière, Ex-Chef de Clinique Adjoint des Maladies Mentales. Médecin, Directeur de la Maison de Santé de Saint-James à Neuilly-sur-Seine. Les Pinel et les Tuke. Price Fr.10.

WRIGHT, JOHN, AND SONS, LIMITED, Bristol. SIMPKIN, MARSHALL, HAMILTON, KENT, AND CO., LIMITED, London.

Consumption: Treatment at Home and Rules for Living. By H. Warren Crowe, M.D. Oxon. Third edition. Price 1s. net.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

BRAMWELL, HERBERT, M.D., C.M. Edin., F.R.C.S. Edin., M.R.C.S., has been appointed Medical Officer for the Nunney District by the Frome (Somerset) Board of Guardians.

BUTTON, M. B. S., M.R.C.S., L.R.C.P. Lond., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Rye District of the county of Sussex.

COTTON, Miss N. G., M.B., B.S. Lond., has been appointed Junior Clinical Assistant to the Gynæcological Department at the Royal Free Hospital.

EVANS, THOMAS GEORGE CANN, L.R.C.P. Edin., M.R.C.S., has been elected Chairman of the Budleigh Salterton (Devon) District Council.

FERGUSON, RALPH SANDERSON, M.B., C.M. Edin., has been appointed, *pro tem.*, Medical Officer of Health of Calne, Wilts.

GOW, WILLIAM J., M.D. Lond., has been appointed Consulting Physician and Vice-President of the Queen Charlotte's Lying-in Hospital.

HOOD-BARRS, Miss H. M., M.B., B.S. Lond., has been appointed Assistant Anæsthetist to the Royal Free Hospital.

JOHNSTON, T. ARNOLD, M.D. Edin., has been appointed Honorary Assistant Physician to the Leicester Infirmary and Children's Hospital.

LOTHIAN, NORMAN V. C., M.B., Ch.B. Glasg., has been appointed Second Assistant Medical Officer at the Stirlingshire District Asylum, Larbert.

LUCAS, ALBERT, F.R.C.S. Eng., has been appointed Honorary Surgeon to the General Hospital, Birmingham.

MCGIVERN, J. P. J., M.B., B.S. Belf., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Donaghmore District of the county of Down.

MACKENZIE, M. D., M.B., B.S. Glasg., has been appointed House Surgeon to the Royal Free Hospital.

MCMURTRY, WILLIAM DICKSON, L.R.C.P. & S. Edin., L.R.F.P.S. Glasg., has been appointed District Medical Officer and Public Vaccinator for the Putney District of the Wandsworth Union.

MCCREDY, Miss E. M. S., M.B., B.S. Lond., has been appointed Senior Clinical Assistant to the Gynæcological Department at the Royal Free Hospital.

MOONEY, W., M.B., B.S. N.U.I., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Kilbeggan District of the county of Westmeath.

PEAKE, Miss C. M., M.B., B.S. Lond., has been appointed House Physician at the Royal Free Hospital.

RAWLINS, Miss M. L., M.B., B.S. Lond., has been appointed House Surgeon at the Royal Free Hospital.

ROBERTS, H. J., M.D. Durh., F.R.C.S. Eng., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Penygroes District of the county of Carnarvon.

SEVESTRE, R., M.D. Cantab., has been appointed to the Senior Staff at the Leicester Infirmary.

STEVENS, THOMAS G., M.D. Lond., has been appointed Physician to the In-patients at Queen Charlotte's Lying-in Hospital.

TEBBUTT, HAMILTON, M.B. Sydney, has been appointed Lecturer on Bacteriology to the Royal Dental Hospital of London School of Dental Surgery, Leicester-square.

WALKER, C. F., M.D., B.S. Lond., D.P.H. Manch., has been appointed Assistant Medical Officer of Health of the Borough of Leicester.

WALLER, Miss M. I., M.B., B.S. Lond., has been appointed Senior Obstetric Assistant to the Royal Free Hospital.

WATTS, Miss, M.D., has been appointed Clinical Assistant at the Royal Free Hospital.

WHITE, CLIFFORD, M.D. Lond., has been appointed Physician to the Out-patients at Queen Charlotte's Hospital.

WHITEHOUSE, A. L., L.R.C.P. Lond., M.R.C.S., L.D.S., has been appointed Assistant Dental Surgeon at the Royal Dental Hospital, Leicester-square.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

ALNWICK INFIRMARY.—House Surgeon, unmarried. Salary £140 per annum, with apartments, attendance, coals, and light.

BARROW-IN-FURNESS, NORTH LONSDALE HOSPITAL.—House Surgeon. Salary £100 per annum, with board, residence, &c.

BEDFORD COUNTY HOSPITAL.—Assistant House Surgeon. Salary £80 per annum, with board, lodging, and laundry.

BELGRAVE HOSPITAL FOR CHILDREN, Clapham-road, S.W.—Resident Medical Officer for six months. Salary at rate of £60 per annum, with board, residence, &c.

BRADFORD CHILDREN'S HOSPITAL.—House Surgeon. Salary £100 per annum.

BRENTFORD UNION.—Medical Officer for No. 8 (Hounslow) District. Salary £175 per annum.

BRENTWOOD, ESSEX COUNTY ASYLUM.—Assistant Medical Offier. Salary £150 per annum, with board, &c.

BRIGHTON, ROYAL SUSSEX COUNTY HOSPITAL.—House Physician, unmarried. Salary £100 per annum, with apartments, board, and laundry.

BRISTOL GENERAL HOSPITAL.—House Physician for six months. Salary £80 per annum, with board, residence, &c.

BRISTOL ROYAL HOSPITAL FOR SICK CHILDREN AND WOMEN.—Junior Resident Officer. Salary £80 per annum, with board, rooms, and attendance.

BRITISH RED CRESCENT SOCIETY.—Two Surgeons.

BURTON-ON-TRENT INFIRMARY.—House Surgeon. Salary £120 per annum, with rooms, board, coal, and light.

BURY INFIRMARY.—Senior House Surgeon and Junior House Surgeon. Salary £110 and £80 per annum respectively, with board, residence, and washing.

CANTERBURY, KENT AND CANTERBURY HOSPITAL.—Resident Medical Officer, unmarried. Salary £90 per annum, with board, lodging, and washing.

CAPE COLONY, FRERE HOSPITAL, East London.—Resident Medical Officer. Salary £300 per annum.

CARDIFF, KING EDWARD VII.'s HOSPITAL.—House Surgeon for six months. Salary £30, with board, residence, and laundry.

CHELTENHAM GENERAL HOSPITAL.—House Physician, unmarried. Salary £80 per annum, with board, lodging, and washing.

CUMBERLAND COUNTY COUNCIL.—Junior Assistant to Medical Officer of Health. Salary £225 per annum.

DENBIGH, DENBIGHSHIRE INFIRMARY.—House Surgeon. Salary £100 per annum, with board, residence, and washing.

DREADNOUGHT HOSPITAL, Greenwich.—Medical Registrar. Salary £50 per annum, with luncheon.

DUBLIN ROYAL VICTORIA EYE AND EAR HOSPITAL, Adelaide-road.—House Surgeon. Salary £40 per annum, with full board and residence

EAST LONDON HOSPITAL FOR CHILDREN AND DISPENSARY FOR WOMEN, Shadwell, E.—House Surgeon. Salary at rate of £75 per annum, with board, residence, laundry, &c.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark, London, S.E.—House Surgeon for six months. Salary at rate of £75 per annum, with board, residence, and washing. Also Aural Surgeon.

GORDON HOSPITAL FOR RECTAL DISEASES, Vauxhall Bridge-road, S.W.—Resident House Surgeon. Salary for six months. Also Honorary Anæsthetist.

GUY'S HOSPITAL.—Fifth Assistant Surgeon.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton.—House Physician (two vacancies).

HUDDERSFIELD ROYAL INFIRMARY.—Senior Assistant and Junior Assistant House Surgeons. Salaries £80 and £60 per annum respectively, with board, residence, and washing.

ITALIAN HOSPITAL, Queen-square, W.C.—Officer in Charge of X Ray Department.

LEEDS GENERAL INFIRMARY.—Resident Obstetric Officer, House Surgeon, and House Physician for six months. Board, residence, and washing provided. Also Resident Medical Officer at the Ida and Robert Arthington Hospitals for six months. Salary £30, with board, residence, and washing.

LEEDS PUBLIC DISPENSARY.—Junior Resident Medical Officer. Salary £100, with board and lodging.

LEEDS TUBERCULOSIS ASSOCIATION SANATORIUM, Gateforth, near Selby.—Resident Medical Officer for six months. Salary at rate of £100 per annum, with board, lodging, and washing.

LIVERPOOL, CITY INFECTIOUS DISEASES HOSPITAL.—Assistant Resident Medical Officer, unmarried. Salary £120 per annum, with board, washing, and lodging.

LONDON HOSPITAL, Whitechapel, E.—Obstetric Registrar and Tutor.

LONDON TEMPERANCE HOSPITAL.—Assistant Resident Medical Officer for six months. Salary at rate of 50 guineas per annum, with board, residence, and washing.

MACCLESFIELD GENERAL INFIRMARY.—Senior House Surgeon. Salary £100 per annum, with board and residence.

MANCHESTER ROYAL EYE HOSPITAL.—Junior House Surgeon. Salary £80 per annum, with residence, board, and washing.

MANCHESTER ROYAL INFIRMARY.—Medical Registrar. Salary £75 per annum.

MARGATE, ROYAL SEA BATHING HOSPITAL FOR SURGICAL TUBERCULOSIS.—Resident Surgeon. Salary at rate of £100 per annum, with board, residence, and laundry.

MOUNT VERNON HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Hampstead.—House Physician. Salary £75 per annum, with board, residence, and washing.

NATIONAL HOSPITAL FOR DISEASES OF THE HEART, Soho-square, W.—Honorary Assistant Physician.
NEWCASTLE-ON-TYNE HOSPITAL FOR SICK CHILDREN.—Honorary Physician for X Ray Department.
NEWPORT AND MONMOUTHSHIRE HOSPITAL.—House Surgeon. Salary £60 per annum, with board, residence, and laundry.
NORTHUMBERLAND HOUSE, FINSBURY PARK, London, N.—Medical Superintendent, unmarried. Salary £300 per annum.
NORWICH, NORFOLK AND NORWICH HOSPITAL.—Casualty Officer for six months. Salary £60 per annum, with board, lodging, and washing. Also Resident Surgical Officer, unmarried. Salary £100 per annum, with board, lodging, and washing.
PADDINGTON INFIRMARY.—Second Assistant to Medical Superintendent for six months. Salary at rate of £100 per annum, with board, lodging, and washing.
PECKHAM HOUSE, PECKHAM, S.E.—Junior Assistant Medical Officer, unmarried. Salary £150 per annum, with board and residence.
PERTH, COUNTY AND CITY ROYAL INFIRMARY.—House Surgeon. Salary £60 per annum, with board.
QUEEN ADELAIDE'S DISPENSARY, Pollard-row, Bethnal Green, E.—Resident Medical Officer, unmarried. Salary £100 per annum, with apartments, coal, gas, and attendance.
QUEENSLAND, AUSTRALIAN INSTITUTE OF TROPICAL MEDICINE, Townsville.—First Assistant, £600 per annum; Second Assistant, £500 per annum; Third Assistant, £400 per annum.
ROYAL FREE HOSPITAL, Gray's Inn-road, W.C.—House Physician for six months. Also Junior Obstetric Assistant. Board, lodging, and washing provided in each case.
ROYAL WESTMINSTER OPHTHALMIC HOSPITAL, King William-street, West Strand, W.C.—House Surgeon for six months. Salary £25, with board, residence, and laundry. Also Assistant House Surgeon for six months. Salary £20, with luncheon and tea.
ST. BARTHOLOMEW'S HOSPITAL.—Assistant Surgeon.
ST. MARY'S HOSPITAL, London, W.—Obstetric Surgeon.
ST. MARY'S HOSPITAL FOR WOMEN AND CHILDREN, Plaistow, E.—Assistant Resident Medical Officer, unmarried, for six months. Salary at rate of £80 per annum, with board, residence, and laundry.
SALFORD ROYAL HOSPITAL.—Honorary Physician and Honorary Assistant Physician.
SAMARITAN FREE HOSPITAL FOR WOMEN, Marylebone-road, N.W.—Medical Registrar.
SHEFFIELD ROYAL INFIRMARY.—Ear and Throat House Surgeon. Salary £70 per annum.
SLEAFORD, LINCOLNSHIRE, KESTEVEN COUNTY ASYLUM.—Assistant Medical Officer. Salary £175 per annum, with apartments, board, &c.
STAFFORD, STAFFORDSHIRE GENERAL INFIRMARY.—House Physician. Salary £82 per annum, with board, residence, and laundry. Also House Surgeon. Salary £100 per annum, with board, residence, and laundry.
STOCKPORT INFIRMARY.—Junior House Surgeon. Salary £80 per annum, with board, washing, and residence.
SUNDERLAND ROYAL INFIRMARY.—Junior House Surgeon for six months. Salary £80 per annum, with board, residence, and laundry.
WALSALL AND DISTRICT HOSPITAL.—House Physician and Casualty Officer. Salary £90 per annum, with board, residence, and laundry.
WAKEFIELD GENERAL HOSPITAL.—Senior House Surgeon, unmarried. Salary £120 per annum, with board, lodging, and washing. Also Junior House Surgeon, unmarried. Salary £100 per annum, with board, lodging, and washing.
WINCHESTER, ROYAL HAMPSHIRE COUNTY HOSPITAL.—House Physician. Also House Surgeon. Salary in each case £80 per annum.
WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—House Surgeon for six months. Salary £80 per annum, with board, rooms, and laundry.
YORK COUNTY HOSPITAL.—House Physician for six months. Salary at rate of £100 per annum, with board, residence, &c.
YORK DISPENSARY.—Resident Medical Officer (female). Salary £140 per annum, with board, lodging, and attendance.

THE Chief Inspector of Factories, Home Office, London, S.W., gives notice of a vacancy as a Certifying Surgeon under the Factory and Workshop Acts at Milnthorpe, in the county of Westmorland.

Births, Marriages, and Deaths.

BIRTHS.

COOK.—On April 15th, at Branksome-terrace, Bournemouth West, to the wife of I. R. Cook, M.B., a daughter.
LEDWARD.—On April 19th, at Elmwood Cottage, Letchworth, Hertfordshire, the wife of H. D. Ledward, M.B., of a son.
PANTING.—On April 13th, at Harvey House, Watton, S.O., Norfolk, the wife of John Panting, M.D., of a son.

MARRIAGES.

BARNICOT—LUCAS.—On April 17th, at the Church of St. Bartholomew the Great, London, Joseph Barnicot, M.D., to Elizabeth Jessie, daughter of the late John Clay Lucas, of Castle Precincts, Lewes.
WORLEY—PRICE.—On April 13th, at the Parish Church, Friern Barnet, William Ernest Amsden Worley, M.D., to Eleanor Lucetta, youngest daughter of the late James Stevens Price and of Mrs. Price.

DEATHS.

ALLFREY.—On April 16th, Charles Henry Allfrey, M.D., M.R.C.P., of Plas Newydd, St. Leonards-on-Sea, aged 73 years.
EVANS.—On April 13th, at Kenilworth-road, Ealing, Francis Morse Evans, M.R.C.S. Eng., L.R.C.P. Lond., aged 68 years.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

PHOTOGRAPHY IN MEDICINE.

THE rôle which photography plays in medicine has become more important year by year, as a perusal of our columns will testify. The *Amateur Photographer* points out in its issue of April 8th the increasing value of photography to medicine. Radiography and photomicrography, of course, occupy an important place in medical work and research, and in an interesting note our contemporary passes in review the various departments of medicine in which these are used, calling special attention to the possibility that photography may make those in one country familiar with the pathological conditions existent in another. The writer finally suggests that a book on medical photography written by a medical man with practical experience would have great utility.

NURSE'S FALSE TESTIMONIAL: PROSECUTION BY THE LONDON HOSPITAL.

RECENTLY at the Rye Borough Petty Sessions a woman was charged with having presented a false certificate of training purporting to be a certificate of the London Hospital, with a view of obtaining a post as nurse under the Hartismere board of guardians. The certificate stated that she had been three years in the service of the London Hospital, whereas she had never been in that institution. The prisoner, who pleaded guilty, expressed deep regret for what she had done and was fined £1 and costs, or in default 14 days' hard labour.

REDNESS OF THE NOSE.

A CORRESPONDENT, "A. C.," has submitted the following case to the readers of THE LANCET for suggestions as to treatment. His patient, a male, aged 33 years, suffers from intermittent attacks of redness of the nose; no other part of the face is affected. The redness is caused by sudden changes of temperature, excitement, exertion, change of position, meals, and sometimes without apparent cause. The nose flushes and becomes dry, and the redness lasts a variable time, usually about half an hour. It is followed by greasy exudation. Apart from the flushing the nose is always cold, and was noticeably so during the hot summer of last year. The patient suffers from cold hands and feet, and gets chilblains in winter; otherwise he is healthy and shows no evidence of digestive trouble. He wears a pince-nez. Ointments have no effect locally. General treatment to improve circulation, dieting, wearing spectacles in place of a pince-nez, has had no effect. X rays and high-frequency current have been tried locally to no purpose.

FOREIGN LANGUAGES FOR ENGLISHMEN.

ENGLISHMEN as a rule do not take the same trouble as the rest of the world to speak in foreign tongues. Some 18 months ago an Association called the Institute of Linguists was formed for the purpose of promoting greater interest in the efficient study of modern languages. The council includes the names of the French, Russian, and Spanish Ambassadors, Lord Denbigh, Mr. Francis Storr (Editor of the *Journal of Education*), Mr. E. C. Jerningham, Sir James Yoxall, Sir Henry Wood, and other persons well known in the literary and commercial world. A number of examinations have already been held, and the next, which will be open to both men and women, is announced for the second and third days of August, 1912. It will be divided into two sections, commercial and literary. In connexion with the institute it is hoped that an employment bureau will shortly be established, and an effort is being made to build a properly equipped institute in London, and establish a correspondence course in connexion with it. Mr. W. L. Threlford, the honorary treasurer, will answer any inquiries and accept monetary assistance at 120, London Wall, E.C.

WANTED—A HOME.

A CORRESPONDENT in a country town in the eastern counties asks for particulars of an institution or home suitable for a man (30 years), where every kindness would be shown in looking after him, as he is not able to look after himself. He is quite harmless, but through lack of intellect has not been able to follow any occupation. The amount that could be paid for the patient would be about 30s. per week.

AN ELECTRICALLY DRIVEN AIR-PUMP.

IN connexion with a pneumatic cesspool emptying installation for service at a large hospital abroad, Messrs. Merryweather and Sons, of Greenwich, have recently supplied a new type of air-pump, arranged to be driven by a small electric motor. The motor and pump are mounted on the same bed-plate, forming a very compact set. The services of the pump will be required for exhausting the air from two portable tank vans, each of 350 gallons capacity, enabling the contents of the cesspool to be drawn up into the tanks through suction hose. The pump, which is known as the "Ravensbourne" pattern, is of the double-barrel type constructed entirely of gun-metal, with rubber disc valves, arranged under separate covers so as

to be instantly accessible. The pump barrels are placed opposite each other, and the plungers are driven by means of a crank and connecting rod. The electric motor gives 2 b.h.p. at 950 r.p.m. In view of the fact that the plant was required for a hospital special precautions have been taken in order to insure noiseless working as far as possible, and the drive from the electric motor to the pump is therefore transmitted through a special worm-wheel gearing which is inclosed in a gun-metal casing forming an oil bath. This arrangement is so effectual that the appliance is absolutely noiseless in working. The pump can be operated alternatively by means of hand-gearing, with detachable winch handles, this gearing being put in and out of action by means of a small lever.

FOREIGN COLOURING MATTER IN CHOCOLATE.

A CORRESPONDENT has forwarded to us a sample of chocolate which when prepared for use in the ordinary way showed, he noticed, a fine crimson powder floating on the surface of the fluid in the cup. On examination we found that the chocolate contained cochineal crudely added. The addition of starch and sugar to cocoa to make chocolate necessarily weakens the colour of the product, and hence cochineal or other colouring matter is added to compensate for this loss. We are not aware that the composition of chocolate is subjected to legislative control, and there does not appear to be a standard insisted upon. The additions to cocoa which make it chocolate are innocent, generally speaking, but some of them often serve to obscure defects.

"AN APPEAL."

UNDER this heading a veteran practitioner appeals to our subscribers in colliery districts to assist him "not as a charity." He says that being "a medical man, close to 80 years of age, he had a quantity of mild aperient pills made up for the miners, and now wishes to dispose of them." He says of them that "they are coated red, 2 grs. each, formula will be sent and price per lb. to any medical friends requiring such," for he anticipates that the Insurance Act, in conjunction with his age, will debar him from practice. We do not publish our correspondent's name, which does not appear on the Register for this year.

Dr. B. Dunlop.—1. The remedy is in our correspondent's hands. 2. We fear the subject is too large to admit of our giving a detailed answer.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

A DIARY OF CONGRESSES.

WE shall publish this diary from time to time that our readers may have under their hands the dates of the approaching scientific Congresses. It is unnecessary to issue the lists of all these functions week by week, and we propose to make only such gatherings as will occur in the immediate future the subject of regular announcement. The following Congresses, Conferences, and Exhibitions are announced for April, May, and June:—

April 12th-30th (London, Olympia).—Ideal Homes Exhibition.
,, 28th-May 4th (Some Metropolitan Boroughs and Provincial Towns).—National Health Week.
May 7th-17th (Washington).—Ninth International Red Cross Conference.
,, 9th-11th (London, University of London).—Annual Conference of the Child-Study Society.
,, 13th (London, Guildhall).—Conference on Diet in Schools.
,, 22nd-30th (London, Chelsea).—Royal International Horticultural Exhibition.
,, 23rd (opens) (Philadelphia).—Twelfth International Congress on Navigation.
,, 23rd-25th (Hanover).—Nineteenth Meeting of the Union of German Laryngologists.
,, 25th-27th (Paris).—International Musical Festival.
,, 26th-28th (Paris).—National Conference of the "Gouttes de Lait."
Whitsuntide (Portrush).—British Esperanto Congress.
May 27th-June 1st (London).—Eighteenth International Congress of Americanists.
,, 29th-31st (Berlin).—Fifteenth Session of the German Society for Gynæcology.
May to October (London, Earl's Court).—Shakespeare's England.
June 11th-14th (Caxton Hall, Westminster).—Second National Conference on the Prevention of Destitution.
,, 17th-29th (London, Olympia).—International Horse Show.
,, 24th-27th (London).—The (Biennial) Health Conference and Exhibition.
,, (London).—Missionary Exhibition.
,, (Atlantic City, N.J.).—Annual Meeting of the American Medical Association.
,, (Birmingham).—Tuberculosis Exhibition.
,, (London, Science Museum, South Kensington).—Second Optical Convention.

The following journals, magazines, &c., have been received:—Journal of State Medicine, Interstate Medical Journal, American Journal of Obstetrics, Life and Health, Indian Medical Record, American Medicine, Journal of Manchester Oriental Society, British Journal of Dermatology, Medical Review of Reviews, Canadian Practitioner and Review, Bulletin of the Lying-in Hospital of the City of New York, Clinical Medicine, Transactions of the Society of Tropical Medicine and Hygiene, Archiv für Experimentelle Pathologie und Pharmakologie, Revue d'Hygiène, &c.

Medical Diary for the ensuing Week.

SOCIETIES.

ROYAL SOCIETY, Burlington House, London, W.

THURSDAY.—Marie C. Stopes: Petrifications of the Earliest European Angiosperms (communicated by Dr. D. H. Scott).—Dr. F. Keeble and Dr. E. F. Armstrong: The Distribution of Oxydases in Plants and their Rôle in the Formation of Pigments (communicated by Mr. W. Bateson).—Dr. B. R. G. Russell: The Manifestation of Active Resistance to the Growth of Implanted Cancer (communicated by Sir J. R. Bradford, K.C.M.G., secretary to the Royal Society).—Dr. W. H. Woglam: The Nature of the Immune Reaction to Transplanted Cancer in the Rat (communicated by Sir J. R. Bradford, K.C.M.G.).—Mr. T. G. Brown and Prof. C. S. Sherrington: On the Instability of a Cortical Point.—Dr. J. W. W. Stephens and Dr. H. B. Fantham: The Measurement of Trypanosoma Rhodesiense (communicated by Sir R. Ross, K.C.B.).

ROYAL SOCIETY OF MEDICINE, 15, Cavendish-square, W. (temporary address during building of new house).

THURSDAY.

OBSTETRICAL AND GYNÆCOLOGICAL SECTION (Hon. Secretaries—J. H. Targett, W. W. H. Tate), at 11, Chandos-street, W.: at 8 P.M.

Annual Meeting—Election of Officers and Members of Council for ensuing year.

Specimens:
Dr. Barris: Tubercle of Fallopian Tube.
Dr. Lewers: Broken Glass Catheter Removed from Bladder.
Dr. Lockyer: Uterus Removed after Utriculoplasty.

Short Communications:
Dr. Macnaughton-Jones: Neuroma of the Mesentery.
Dr. Lockyer: Embryotomy after Version for Placenta Prævia.
Dr. Willett and Dr. Williamson: Cases of Dystocia due to Premature Retraction Ring.
Dr. Russell: Note on Extra-peritoneal Cæsarean Section.

Paper:
Dr. Walter Swayne: The Clinical Significance of Acidosis in Pregnancy.

FRIDAY.

LARYNGOLOGICAL SECTION (Hon. Secretaries—W. H. Kelson, Dan McKenzie), at 11, Chandos-street, W.: at 4.30 P.M.

Cases and Specimens
Will be shown by Dr. Lambert Lack, Mr. Norman Patterson, Dr. W. H. Kelson, Mr. Stuart-Low, Mr. Alexander Tweedie, Mr. Seccombe Hett, Mr. Thomas Guthrie, Dr. Bardswell, and others.

NORTH-EAST LONDON CLINICAL SOCIETY, Prince of Wales's Hospital, Tottenham, N.

THURSDAY.—4.15 P.M., Clinical Cases.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

ROYAL COLLEGE OF PHYSICIANS OF LONDON, Pall Mall East.

MONDAY.—5 P.M., Sir Ronald Ross: Recent Researches on Malaria—Nosology. (Oliver-Sharpey Lecture.)
TUESDAY.—5 P.M., Sir Ronald Ross: Recent Researches on Malaria—Endemiology. (Oliver-Sharpey Lecture.)

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22 Chenies-street, W.C.

MONDAY.—College re-opens.
TUESDAY.—4 P.M., Dr. G. A. Sutherland: Clinique (Medical). 5.15 P.M., Lecture:—Mr. V. Z. Cope: Carcinoma of the Colon.
WEDNESDAY.—4 P.M., Mr. D. C. L. Fitzwilliams: Clinique (Surgical). 5.15 P.M., Lecture:—Mr. J. M. G. Swainson: Abdominal Section.
THURSDAY.—4 P.M., Mr. R. Howard: Clinique (Surgical). 5.15 P.M., Lecture:—Dr. C. O. Hawthorne: The British Pharmacopœia, its Relation to the Public and to the Profession.
FRIDAY.—4 P.M., Mr. A. McNab: Clinique (Eye). 5.15 P.M., Lecture:—Dr. W. Wingrave: Aural Discharges.

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

MONDAY.—10 A.M., Dr. Simson: Diseases of Women. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye.
TUESDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Abraham: Diseases of the Skin.
WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Mr. B. Harman: Diseases of the Eye. Dr. Simson: Diseases of Women.
THURSDAY.—2 P.M., Medical and Surgical Clinics. X Rays. Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye.
FRIDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Abraham: Diseases of the Skin.
SATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. Mr. B. Harman: Diseases of the Eye. 2 P.M., Medical and Surgical Clinics. X Rays. Operations.

LONDON SCHOOL OF CLINICAL MEDICINE, Dreadnought Hospital, Greenwich.

MONDAY.—2 P.M., Operations. 2.15 P.M., Mr. Turner: Surgery. 3.15 P.M., Sir Dyce Duckworth: Medicine. 4.30 P.M., Mr. R. Lake: Ear and Throat. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat. 2.15 P.M., Special Lecture:—Mr. Turner: Some Difficulties in Abdominal Cases.

TUESDAY.—2 P.M., Operations. 3.15 P.M., Dr. R. Wells: Medicine. 2.15 P.M., Mr. R. Carling: Surgery. 4.15 P.M., Sir M. Morris: Diseases of the Skin. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin. 4.30 P.M., Special Lecture:—Prof. Hewlett: The Ætiology of Tuberculosis.

WEDNESDAY.—2 P.M., Operations. 2.15 P.M., Dr. F. Taylor: Medicine. 3.30 P.M., Mr. Cargill: Ophthalmology. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 11 A.M., Eye. 2.15 P.M., Special Lecture:—Dr. F. Taylor: Severe Anæmias.

THURSDAY.—2 P.M., Operations. 2.15 P.M., Dr. G. Rankin: Medicine. 3.15 P.M., Sir W. Bennett: Surgery. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat. 4.30 P.M., Special Lecture:—Dr. Singer: Gastric Secretions in Health and Disease.

FRIDAY.—11 A.M., Dr. A. Davies: Pathological Demonstration. 2 P.M., Operations. 2.15 P.M., Sir J. Rose Bradford: Medicine. 3.15 P.M., Mr. McGavin: Surgery. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin.

SATURDAY.—10 A.M., Radiography. Out-patient Demonstration:—10 A.M., Surgical and Medical. 11 A.M., Eye.

ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN, 49, Leicester-square, W.C.

TUESDAY.—6 P.M., Dr. J. L. Bunch: Congenital Syphilis.

ANCOATS HOSPITAL, Manchester.

THURSDAY.—4.15 P.M., Mr. W. R. Douglas: Chronic Intestinal Obstruction—Differential Diagnosis. (Post-Graduate Clinic.)

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (29th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M.), St. Mark's (2.30 P.M.), Central London Throat and Ear (Minor 9 A.M., Major 2 P.M.).

TUESDAY (30th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London, (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M., Ophthalmic, 2 P.M.), Tottenham (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.), Royal National Orthopædic (9.30 A.M. and 4 P.M.).

WEDNESDAY (1st).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's 2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M., Dental, 2 P.M.), Tottenham (Ophthalmic, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

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SATURDAY (4th).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 A.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M.), West London (2.30 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic (2 P.M.), Hospital operations are performed daily.

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(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, April 24th, 1912.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rain fall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
April 18	29·93	S.W.	...	99	65	43	46	47	Hazy
,, 19	30·02	W.	...	117	67	47	48	54	Fine
,, 20	30·17	S.E.	...	110	66	48	50	55	Fine
,, 21	30·34	S.E.	...	118	72	48	52	57	Fine
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